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EDITED BY

G. P. SYLVESTER, M.D.

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THE CANADA LANCET.

VOL. XXXII. TORONTO, SEPTEMBER, 1899. No. 1.

CANADIAN MEDICAL ASSOCIATION.

HELD AT TORONTO, AUGUST 30TH, 31ST AND SEPTEMBER 1ST.

The thirty-second annual meeting of this Association was held in the theatre of the Normal School building, Toronto, on the above dates, Mr. Irving H. Cameron, Toronto, the President of the Association, in the chair, and Dr. F. N. G. Starr acting as General Secretary. The meeting was called to order by the President at 10.30 a.m., and the minutes of the last meeting at Quebec were read and adopted. About eighty members were present for the first session, which numbers were swelled to about 275 before the completion of the meeting.

Dr. A. J. Johnson, Toronto, the chairman of the Committee on Arrangements, submitted his report for the guidance of members, which, on motion, was received and adopted.

The General Secretary then read telegrams of regret from Dr. J. M. Beausoliel, Montreal, Dr. E. A. Farrell, Halifax, and Dr. A. Lapthorn Smith, Montreal, stating that the latter was unable to be present on account of the death of his daughter.

The President informed the meeting that he had already despatched a letter of sympathy to Dr. Smith.

The following gentlemen were elected members of the Association: G. Henderson, Strathroy, Ont.; L. M. Sweetnam, Toronto; J. L. Bradley, Creemore, Ont.; Frank Porter, Toronto; P. Howey, Owen Sound, Ont.; L. Laberge, Montreal; Geo. W. Badgerow, Toronto; C. N. Laurie, London Junction; A. W. Heaslip, Hillsdale, Ont.; S. G. Storey, Blenheim, Ont.; F. O. Lawrence, St. Thomas: C. E. B. Dunscombe, St. Thomas, Ont.; A. Stewart, Palmerston, Ont.; W. T. Connell, Kingston, Ont.; T. H. Stark, Toronto; A. Stark, Berwick, Ont,; J. M. Jory, St. Catharines, Ont.; J. W. S. McCullough, Alliston, Ont.; E. Meek, Port Rowan, Ont.; J. H. Mullin, Hamilton, Ont.; J. F. Uren, Toronto; A. H. Halliday, Traverse City, Mich.: O. J. McCully, Moncton, Ont.; George Elliott, Toronto; R. J. Trimble, Queenston, Ont.; W. S. Harrison, Toronto; W. H. Harris, Toronto; W. O. Stewart, Guelph, Ont.; J. M. Hart, Toronto; F. Winnett, Toronto; E. Sisley, Maple, Ont.: A. R Gordon, Toronto; E. H. Stafford, Toronto; A. T. Macnamara, Toronto Junction; D. H. Hogg, London, Ont.;

A. T. Hobbs, London, Ont.; E. T. Snider, Brussels, Ont.; C. E. Stacey, Toronto; L. Bentley, Toronto: C. H. Thomas, Gormley, Ont.; Beattie Nesbitt, Toronto; Chas. Trow, Toronto; R. H. Green, Embro, Ont.; R. N. Fraser, Thamesville, Ont.; Thomas Kerr, Toronto; William Kerr, Cayuga, Ont.; B. Spencer, Toronto; D. W. Gordon, Lucknow, Ont.; J. P. Kennedy, Wingham, Ont.; W. J. O. Malloch, Toronto; W. H. Groves, Burnhamthorpe, Ont.; H. H. Sinclair, Walkerton, Ont,; D. B. Bentley, Sarnia, Ont.; A. W. McFaul, Stayner, Ont.; D. King Smith, Toronto; J. H. Cotton, Toronto; F. Montizambert, Ottawa; Hugh Bain, Prince Albert, N.W. T.; J. H. Elliott, Gravenhurst, Ont.; J. Montgomery, Oshawa, Ont.; Dr. Hodgkin, Deer Park, Ont., Julia Thomas, Toronto; Dr. Jackes, Eglington, Ont.; W. H. Clemes, Toronto; W. T. Sherris, Toronto; R. O. Snider, Toronto; Ernest Hall, Toronto: W. J. McCollum, Toronto: J. M. Henwood, Toronto; A. G. Ashton Fletcher, Toronto; B. Z. Milner, Toronto; W. J. Wilson, Toronto: Graham Chambers, Toronto; Lelia H. Davis, Toronto; C. J. O. Hastings, Toronto; Geo. H. Carveth, Toronto; Fred Fenton, Toronto; C. L. Starr, Toronto, and J. P. Russell, Toronto.

Tuberculosis in Canadian Cattle and its Prevention.

Dr. J. George Adami, Montreal. At the outset, he stated that there were three questions to be asked and answered:

1. Is tuberculosis in cattle a source of danger to other cattle, so as to seriously affect their well-being and to be a source of loss to the owners?

2. If infectious from animal to animal, is it infectious from animal to man and thereby a grave source of danger to the human race?

3. If infectious from animal to man, what are the commonest modes of infection and, as a sequel to this, how are we to diminish the danger?

If the first can be answered in the affirmative, how can the disease be erased? To do this we should employ all the means in our power; what organization and official steps should be taken in our country to stamp it out? In regard to the question is it dangerous to other cattle when in cattle, there is abundant evidence to show that the introduction of an infected bull into a herd has been followed in a short time by symptoms of the disease in old members of the herd. Most of us see very little of its results. The learned professor quoted from slaughter house statistics taken from Professor Conn, showing the increase of tuberculosis in European countries within the last ten years; those from Leipsic being especially important on account of the marked increase reported there. In 1885 the rate was 11%, and in 1895 it had risen to 33.3%, and it is still increasing. At this rate of going, in a few years there will be no breeding herds left unaffected. We can thoroughly rely upon the tubercuiin test. In Germany they have come to the conclusion that the amount of tuberculosis is over 50% of the animals in the land. Stringent regulations should be carried out by the Government. The animal should be seen before permitted to enter Canada. If once an animal has been inoculated with tuberculin, you will not get a secondary reaction until a month has elapsed. Nor even in the Eastern States of

America is the condition more satisfactory. In Massachusetts the disease has been found very common. The cattle imports for that State show in several large herds as high as 100%. What are the results and dangers from this extreme prevalence of the disease elsewhere? First, the effects upon the animal itself, milk, breeding, etc. Sooner or later the disease progresses. Second, there is danger to the community in employing the milk and meat in such an animal. In 1893 Professor Wright estimated that tubercle in cattle caused an annual loss of $2,000,000, *i.e.*, loss in milk and butter. In regard to his second question if infectious from animal to animal, is it infectious from animal to man, we generally give an affirmative answer to this. The amount of reliable evidence of direct transmission from animal to man is singularly slight. It would be easy to determine this if we could make a direct experiment, but we cannot do that; we cannot inoculate man from the diseased meat. We can do the other, though, *i.e.*, inoculate cattle from the sputum, and we find that they are slightly susceptible to human tubercle. That obtained from man, however, tends to be localized, and leads to transient results. We have distinct evidence that the bacilli obtained from fowls differ widely in properties from those obtained from man, than do the bovine bacilli. Fowls may with impunity be fed with human sputa without becoming infected. Man may be infected from birds but we cannot legitimately apply that to immunity to bovine tuberculosis except that in the main they resemble each other, and that is about all we can say; they are identical. Even in butchers and children fed upon the meat and milk of tuberculous cattle, there is lack of positive evidence. In them we must exclude every other possible mode of infection, and such exclusion is a matter of extreme difficulty. Thus, to obtain any authentic case is a matter of great difficulty. The frequency of tubercle amongst children would appear to be a strong argument in believing that the milk of cows affords the most likely source of infection. He quoted Stillé in the British Medical Journal, out of 269 necropsies on children one-third showed tubercular lesions; 43% occurred at the milk drinking period of life and 56.2% occurred in the first three years of life. The mortality from tubercle in early childhood is not decreasing, and the opinion that the prevalence is due to infection from milk from tuberculous cows seems to be well founded. Examining Dr. Stille's statistics there is difficulty to make out which are the older and which are the recent lesions. Large cheesy masses in the mesenteric glands indicate that the intestinal lesion is the older, and if in the bronchial glands the lesion is older; this was the source of the infection. Thus, of the 269 cases above referred to, the channels of infection were found as follows: respiratory, 57.2%; intestinal, 23.4%, probably directly and so from milk: bones, joints, etc., the balance, altogether about fifty cases out of the 269. In 1890 the testing of cattle was encouraged to the utmost possible extent by the Government. In 90,000 inspected cattle at Montreal in 1894 only eighty were rejected, and only two of these were recognized as suffering from tuberculosis, and even in them the disease was only limited. Pleuro-pneumonia is absolutely non-existant in Canada. Out of 2,000 post mortems at Montreal there were only fourteen cases in which tubercles were detected in

the lungs, *i.e.*, 0.6%. He advocated the appointment of inspectors to kill off or buy and place on Government reserves all infected cattle, and then in a very few years Canada will become practically free from the disease and become a great centre for the breeding of high class cattle and other countries will have to come to us for their stock.

Professor Oldright, University of Toronto, asked whether the statistics quoted by Dr. Adami were slaughter house statistics or otherwise.

Dr. J. J. McKenzie, bacteriologist to Ontario Board of Health, spoke of the effect of climate in reducing the amount of tuberculosis amongst our cattle, and stated that our climate is favorable for this. The difficulty is that the cattle that ought to have the benefits of the climate, in winter time as in summer, are shut up and housed in small stables in which every breath of fresh air is kept out, as their owners think more of keeping them warm. Here we have a very favorable condition for the spread of tuberculosis. As to the presence of tubercle bacilli in the milk, some six years ago, he investigated some twenty-five cattle that reacted to the tuberculin test. He examined the milk of all these cows, using the specimen after passing through the separator, and in only two cases were any bacilli present, and in these two cases he only found six or eight bacilli in the whole specimen; and in the post mortem afterwards we were unable to find any tuberculosis in the udders. Probably these passed into the milk from the leucocyte.

Dr. Clarence Starr, Toronto, stated that in the fall of 1897 he had done some experimental work for the Ontario Government along the same line, and it was then the intention of the Minister to introduce the Bang's system. In the United States, he said, he understood that the slaughter house statistics were about 33%. In Canada it is very much smaller; in fact, very small in comparison with other countries. Statistics taken from cattle for export are not fair; those are cattle taken from the herd and free from disease as far as possible The Dominion Government, some time before that referred to, had passed an order-in-council recommending that all cattle reacting to the tuberculin test should be slaughtered. That, of course, put a stop to the hunting of statistics, on account of the fact that the farmers would only suppress it if it were in their herds. He thought, possibly, that the per centage in cattle in Canada was even larger than Prof. Adami stated, though freer than any other country in the world. In regard to the seven weeks quarantine, that is a rather radical step, and objections may be offered. All cattle imported into this country should have a certificate of freedom from tuberculosis by means of the tuberculin test given by the breeder, and no cattle should be imported into this country unless such has been done. Prof. Nocher, of Paris, has instanced a number of cases in which herdsmen sleeping with their herds in the same stables, poorly ventilated and a great many cattle in the building, developed tuberculosis. The question in his mind was whether Prof. Bang's theory could not be more easily carried out than the wholesale slaughtering of the cattle. We should make a distinction between clinical symptoms and cattle reacting to the tuberculin test. We necessarily leave a larger portion of the herd which will, possibly, later on, show clinical symptoms.

Dr. Turnbull, Pennsylvania, said he had listened with a great deal of pleasure to the able paper of Prof. Adami, and thoroughly agreed with the writer in making a long period of quarantine for animals imported. In Pennsylvania recently a law was enacted, within the past two years, that breeders within the State are not to bring into the State any animals for dairy or breeding purposes unless they have been tested for tubercle by the health authorities from the State in which they were bought. It was an excellent law, but the law was not stringent enough in that the breeders had got on to the fact that if an animal reacts to tuberculin a period has to elapse before it will react again, and a great many of the breeders are unscrupulous enough to keep injecting their animals with tuberculin. He was in favor of a seven weeks' quarantine, or longer would be better. Make the quarantine period just as long as you can. It is better for your breeders.

Dr. P. H. Bryce, Toronto, Secretary of the Provincial Board of Health, spoke of the powers bestowed on health boards by the Ontario Government in 1896, and said that the regulations were practically those of Bangs.

Dr. Roddick, Montreal, said that he had taken occasion recently during the past session of the Dominion Parliament to direct the attention of Parliament to this fact in connection with a series of resolutions passed by the Medico-Chirurgical Society of Montreal, to impress upon the Government, if possible, the practice of allowing only veterinary surgeons to inject tuberculin,—to make it impossible for farmers to do so, and in that way to prevent the fradulent methods now-a-days practised by them. That is, veterinary surgeons should alone be allowed to use tuberculin upon cattle before they were sold. We have several illustrations in the Island of Montreal, where a farmer is known to have injected his cattle, sold them to a gentleman-farmer, and all of these cattle turned out to be tuberculous, reacting later on to the tuberculin test. He quite agrees with Dr. Turnbull that as long a time as possible for quarantine should be enforced. He thought byres were not as thoroughly looked after as they should be, and spoke of some parts in Lower Canada where they were very badly looked after. In some stables, there is only 200 feet of air space where there should be 2,000 feet of air space. Then care is not taken to cleanse the stable as it should be done. He promises upon some future occasion to bring the matter up in Parliament as he wants the Government to take a more strong hand in this matter. He has the promise of the Minister of Agriculture that he will discuss the question of the Bang's System and the slaughtering of the animals, in order to eradicate this terrible disease from among our cattle.

Professor Adami, in reply, said, in regard to the question by Dr. Oldright, these figures from Leipsic are not all from selected animals. The slaughter-house inspection is very scientific in Germany; they are slaughter-house statistics. With regard to Dr. McKenzie's interesting experiments, one can find absolutely, tubercle in the milk and no tuberculosis in the udders, but one does find fibrosis of the glands, but no sign of tubercle in the glands. As to the question of quarantine, the Government of Canada has made regulations to the effect that cattle imported

from England, a certificate shall be brought in regard to the tuberculin test with them. The tuberculin test can be employed by those willing to employ it frauduently. He advocated the adoption of the Bang's system and felt assured that in three or four years, we can get rid of tuberculosis, at any rate aid it by a more extensive slaughter than in the old country. We should set the example and lead the world in the matter of this eradication.

The Results Already Achieved at the Gravenhurst Sanitarium.

Dr. J. H. Elliott, Medical Superintendent of that Institution, reported on this subject. He first gave a description of the founding of the sanitarium, the gentlemen who had interested themselves in its establishment, such as Sir Donald Smith, Chief Justice Sir William Meredith, Mr. W. J. Gage and Dr. N. A. Powell, Toronto, and then proceeded to enlighten the membership of the Association as to its management. In no sense has it been erected for speculative purposes. It is intended to be in every respect a public institution and to make at least half of the beds free. Already $70.000 has been expended on the place. He then described fully the construction of the administration building and the several cottages. In his classification of cases when admitted, he had followed the methods of Trudeau, "incipient," "advanced" and "far advanced." On discharge, they are classified as: "apparently cured," "disease arrested," "improved," "stationary," "failed" or "died." "Apparently cured" signifies absolute absence for three months of any expectoration. "Disease arrested," cases in which bacilli are still present, but all constitutional disturbance gone for some time. "Improved" are cases in which there has been some marked improvement in the condition of the lung. The first year's report shows that 116 were admitted during the first year. Of these 33 remained at the close of the year, 83 having been discharged. There were 12 "apparently cured"; 23 "disease arrested"; 29 "marked improved"; 11 "unimproved"; 5 "failed" and 3 died. The average stay of each patient was 98 days. Making a selection of 30 patients in three months, 6 being "incipient" cases, 16 "advanced" and 8 "far advanced," of the 30, 22 gained in weight, 4 lost weight, and 4 neither gained nor lost. One patient in four months gained 41½ pounds. These results were obtained while the sanitarium was undergoing development. The sanitarium year ends on the 30th of September. Taking the first nine months of the year, ending at the 30th June. Of 17 "incipient" cases, 11 were "apparently cured," 6 "improved" or "disease arrested," none "stationary," none "failed" and none died. There were three cases of doubtful evidence of phthisis, 1 was "much improved" and 2 "apparently cured." The average stay was 152 days. Of the 72 cases discharged 61 had bacilli when admitted and 47 had bacilli when discharged. Of the 72, 60 or 83 per cent. gained in weight. One patient gained 18 pounds in the first month. He drew especial attention to the fact that of 17 "incipient" cases, 11, or 65 per cent. were "apparently cured." With a longer stay 80 per cent. could be got. From 12 to 18 months have elapsed since the discharge of the patients of the first year.

Twelve were reported "cured" and in none of these has there been any return of the trouble, and all are in perfect health. Of a number who gave promise of a speedy cure, several have progressed favorably since discharge. It is important not to tell the patient that the lungs are weak; and do not send far from home, patients in whom the disease is far advanced; it is not right. It is impossible at this time to outline the treatment in detail. Broadly speaking, it is rest when pyrexia is present, regulated exercise in apyretic cases, suitable diet and hygiene and fresh air the entire twenty-four hours daily and constant supervision of the patient's daily life and the special facilities provided in all seasons and in all weathers.

Dr. Powell, Ottawa, asked what important advances have been made by separating cases of phthisis from the general community and putting them under proper conditions, i.e., those cases of incipient phthisis. Then he would like to know broadly on what the diagnosis was based, in order to place them in that class. In every case was it based upon the sputum, or to what extent on the clinical symptoms given, in order to say, was the person in the tuberculous state at all. He further stated that he had been very much interested in this sanitarium and would like to ask what the charges were to those patients for admission. What proportion are "pay" and what "public" cases? How does the sanitarium derive its income, by public subscription; and whether the Ontario Government subsidizes it?

Dr. Lafferty, Calgary, spoke of a case of phthisis from the town of Berlin, Ont., "far advanced" which was refused admittance to the Gravenhurst Sanitarium and afterwards sent to the North-West Territories and ultimately recovered.

Dr. N. A. Powell, Toronto, stated that Dr. Stewart, Montreal, and himself had been responsible for a large proportion of the diagnoses in these cases. The examinations have been checked over by the late Dr. J. E. Graham and Dr. J. L. Davison. Since the death of Dr. Graham, Dr. W. Britton, Toronto, has been appointed on the staff. It was quite proper to place them under treatment before bacilli could be found in the sputum. There must be a breaking down of the lung tissues before you can get the bacilli. Bacteriological examinations are always made and made repeatedly. He stated that he had to accept the responsibility for there being at the present time, a sanitarium at Gravenhurst. There is no desire that there shall be any financial return. There are no salaries excepting to the superintendent.

Dr. E. H. Adams, Toronto, asked whether persons are sent to the Gravenhurst Sanitarium in which the pathological examinations are not made, and whether they are kept in the same part of the sanitarium as the rest of the patients.

Dr. Elliott, in reply, all the incipient cases we were very careful to classify as incipient cases. He stated he had mentioned three cases of doubtful diagnosis. In the majority of the other 17 cases, the bacilli were present. There were other cases, however, of localised deposit or an

evening rise of temperature with most of them some sub-normal temperature in the morning. The tuberculin test has not been used. The rate is $6.00 per week for all patients. The Ontario Government gives us help to some extent as other hospitals. We get our share of the $110,000 grant, the total grant for the year being about $1,900. Each patient has a separate room; two patients are not crowded together into one room. There are two double rooms only. All the expectoration is collected either in a box or in a handkerchief and is destroyed by fire. Last year there was a deficit which was not met.

FIRST DAY—AFTERNOON SESSION.

"Christian Science."

Prof. J. H. Richardson, Toronto University, stated that when it was suggested that he should read a paper on this subject, he willingly consented, not because the subject was worth five minutes talk, but because we should have a more definite knowledge of it. He quoted extracts from "Science and Health," and other of Mrs. Eddy's writings. It received its name in 1876 and was a conglomeration of spiritualism, homœpathy, mesmerism, deceit and avarice. In 1862, Mrs. Eddy, then Mrs. Patterson—she has had four husbands—had been a helpless invalid for six years, though the illness is not stated. She then came under the care of a Dr. Quinbe, who, unlike all medical practitioners, made no outward applications, simply sitting by the patients and talking to them about the disease. This man said, "I change the fluids of his system and establish the principle of his health." In that same year Mrs. Eddy met with an accident which brought back her old disease. In 1866 she again received "the treatment" and her friends were frightened at her being restored to health. Such was the commencement of this so-called "Christian Science." In the opinion of the essayist Eddypathy was "ridiculous muss."

President's Address.

Mr. I. H. Cameron first expressed his thanks at the honour conferred on him and then thanked the members of the Association for their unprecedented attendance at the meeting. "The burden of my lament to-day is the over-crowding of our ranks and the absence of scholarship in the profession." The same thing is equally true of the other professions; the church and the bar suffer from the same plethora as ourselves. To site an illustration; it was formerly considered that 1,000 souls were enough to keep one doctor alive, now in the city of Toronto, there are over 400 doctors to a population of 200,000, and other cities will reveal like conditions. He frequently quoted the opinions of Mitchell Banks and spoke of the small fees often paid, disproportionate to the service rendered. The difficulty of making a living in medicine is steadily getting greater, whilst at the present time as an honourable profession medicine never took such high rank in all its history. A quiet life in the country

is not in accord with the spirit of the times, and this leads often to a multiplication of our numbers in the cities. Still our business is not to lament the past, but to do the best for the present. There is no profession that tries to be more honest. There are those who should not be in the profession at all, being better fitted for other walks of life. One told him that he just wanted money, and that he did not care anything about the profession. Another fault is, no doubt, the growth of specialism. He deplored the fact that the old-fashioned practitioner is dying out, the decadence of the doctor's horse and the introduction of the automobile. Defect in scholarship and manners came in for notice; the pupil no longer meets his master with terms of respect, but on terms of equality. He quoted Mitchell Banks again in regard to lack of scholarship. There was eternal cramming and loss of power of thinking. What is the remedy? Stiffen up entrance examinations. We should have this rough sieve at the very beginning. It was a great mistake to allow inferior men to enter upon a course of studies, as after matriculation they usually got through somehow, even though they took separate subjects for a period of ten years. He outlined the course of studies according to his light, and stated that the course should conclude with three year's clinical experience. The diminution of the ranks of the Association were feelingly referred to by the departure to the silent majority of Drs J. E. Graham, Toronto; H. P. Wright, Ottawa, and J. H. Mullin, Hamilton. In concluding his admirable address, he referred to the high honour conferred on the profession of medicine, when Her Majesty bestowed the honour of knighthood upon three members of the profession in England, Burdon Sanderson, Michael Foster and Mitchell Banks.

An Experience with Formaldehyde Disinfection.

Dr. F. Montizambert, Director-General of Public Health, Ottawa, related an experience with the employment of this disinfectant in an out-break of smallpox on board the steamship Lake Huron, 25 days out from port on the Black Sea, with 2,400 Doukobors on board. On the 6th of June last, the vessel was ordered into quarantine and all of the passengers were landed by the ninth inst. and the vessel was fully and completely disinfected by Monday and Tuesday following, the 12th and the 13th. A new crew was in charge on Wednesday the 14th at 4 p.m. Formaldehyde in solution was used for the saloons and state-rooms and in all parts where the fittings would be destroyed by steam. Steam is not suitable for large rooms as the temperature cannot be kept up. Formaldehyde, therefore, was used on this occasion and the total measurement of surface on which it was employed was 200,000 feet odd. Twelve ounces of this solution was allowed for each 1,000 cubic feet of space. Two new sets of men paraded, occupied, lived and slept in the vessel from two to four days after 17 cases of smallpox had been removed and there were 2,400 people on board. That was a severe test. He was happy to be able to state that there has not been reported a subsequent case of the disease during two and one-half months that have since elapsed.

Massage and the Relief of Eye Strain in the Treatment of Glaucoma.

Dr. George M. Gould, Philadelphia, in reading this paper stated that glaucoma will first come into the hands of the general practitioner for treatment. Four years ago he wrote concerning glaucoma, that massage properly applied would seem to be a good process stimulating and arousing normal functions generally. He instanced one case in which vision had been reduced to 21/100 and there had been no considerable response to esserine, he determined to try massage and the vision steadily rose to 20/30. During the last four years he has tried the same plan in a number of cases and then proceeded to relate his experiences and results. In the first case there were typical symptoms of glaucoma with the exception of pain. Tension, right plus 1; left plus 2. Massage was employed and for three years the eyes have remained normal. Massage may prove prophylactic in incipient cataract. In the second case, massage also was performed and the vision remains perfect and the tension perfectly normal, now for three years. Several other cases were also stated and the Doctor has yet to see any bad results. By this treatment all venous and lymph spaces with stasis are cleared and broken. Massage may be of great service, especially if seen early. In many cases it may prevent enucleation and in sub-acute attacks it is invaluable, and is promptly prophylactic as well as therapeutic.

Dr. R. A. Reeve said that glaucoma is such an insidious and dangerous disease that one hails with pleasure any new treatment, or anything looking towards its prophylaxis. Taxis exerts beneficial results in this disease and fortunately it is a very rare disease. He congratulated Dr. Gould upon the wisdom he displayed in laying such great stress on the scientific correction of errors of refraction.

Dr. Burnham. Glaucoma often baffles us, and one addition to its treatment such as Dr. Gould has given us is very acceptable and comforting to us all.

Dr. Burt, Paris, Ont. said that the profession would welcome any new treatment so easily performed, as massage seems very simple and easy of operation. Glaucoma, however, is rare, and he hopes he will never have to put this treatment into practice.

Treatment of Acute Digestive Disorders of Infancy.

Dr. A. R. Gordon, Toronto, contributed a paper with this title and said that it was his purpose to discuss the treatment of these troubles in previously healthy infants. In these attacks we must have a knowledge of the functions of the saliva, gastric juices, bile and pancreatic fluids as well as that of the succus entericus, together with peristalsis of stomach and intestines. We must also be able to classify and diagnose the separate and distinct processes, their cause and results. When the intestinal epithelium is impaired, the circulation in the liver becomes sluggish and then we have all the symptoms from malaise and headache to those of alarming intoxication. We should begin our treatment with the suspension of all the regular articles of diet and the employment of substitutes,

and if the attack is in the stomach, the reason for this is all the more pronounced. Witholding of foods must be absolute, from 8 to 10 or 12 or even 24 hours with the administration of water alone. In the simpler forms suppression of food may be all that is necessary for a few hours. After this, rice water, etc., may be used. Liquid peptonoids he has found very satisfactory. It may be necessary to persist in the use of this diet for days, until all the symptoms have disappeared and the child practically convalescent. Cow's milk should be the very last to be allowed. Some of the malted foods answer very well at first. When milk is to be allowed it is safer to peptonize it, although sterilized milk is sometimes more easily borne. Purgation and repeated purgation is indicated at the commencement of an attack. Calomel is the best drug to employ with soda bicarb. to prevent griping, with divided doses when vomiting is troublesome. Thus the liver is restored to its normal condition and activity and the bile flows more freely. The alimentary canal is emptied by an abundant flow of nature's antiseptic. Castor oil is safe and effectual and soothing. If vomited, a second dose ought to be administered at once; a child rarely vomits the second dose. During convalescence, the aromatic syrup of rhubarb or the phosphate of soda are satisfactory. Daily purging should be continued with these remedies until the temperature falls to normal or nearly so and until the offensiveness of the discharge ceases. Initial doses of calomel and castor oil have the effect of bringing away matter which has been lodged in some crypt or recess of the bowel. We may feel safe when we see the characteristic calomel stool. In regard to flushing, warm water with sufficient salt added should be employed and if vomiting be present that is no contra-indication. It serves for the purpose of lavage and should be used except in the continued vomiting of acute gastritis. Water and normal saline solution per rectum is even more important and should be used in all cases. The quantity should be large and used three or four times daily, and the temperature of the water should be about the normal body temperature. A long rectal tube or catheter should be used (20) and the patient placed in the lithotomy position, turned slightly to the left and allowed to lie comfortably. You will sometimes have some difficulty on the right side of the rectum in getting the tube passed, but if you rotate it you will succeed in accomplishing it. As to sedatives, they are local and general. Bismuth and opium, the former used in large doses, 2 drs. in 24 hours are the best. Opium should be used to allay excitement, to remove pain and to control peristalsis; but it is unfortunate if it is required before the bowel is cleansed. While the temperature remains high its use should be restricted. It should be used separately and is contra-indicated in cases where there is any cerebral excitement. Dr. Gordon said he was skeptical of antiseptics. The extent of surface and the poison to be neutralized is great, but after the affected surface is cleansed, they may then prevent putrefaction and irritation of the membrane. If used, they should be given in the food or after it. Asepsis should be secured to prevent decomposition. In the administration of antiseptics in the late stages, much benefit may be had from them, especially HCl. Astringents should never be used.

Dr. Benedict, Buffalo, spoke in regard to antiseptics inside the body and said that he was very skeptical of such remedies. If the bowel is full of fæcal contents it is a difficult matter to ascertain whether they are any good or not; but following the purgation, after the fæcal mass has passed through the bowel, antiseptics can be used and then you will find them valuable. Beta naphthol was no good. The condition was one of toxæmia. Opium he practically never gives to children. There is, however, one drug that acts as a powerful sedative and that is catnip tea.

Dr. Holmes, Chatham, Ont., spoke of the mortality and said that it was a fatal disease, and doubted if there was any branch of treatment that had improved more than the treatment in these classes of cases. The relief of pain by opium he thinks is a mistake. The pain that these children suffer from and the uneasiness they manifest is due to the abnormal contents of the alimentary canal or to the high temperature usually accompanying these conditions. Opium will relieve the pain but does much harm in other ways; it obscures the symptoms. In former years he used to employ it, but it was accompanied with so many drawbacks that he abandoned it many years ago. He said he had reverted to the temperature but the essayist had not referred to the therapeutic measure of hydrotherapy; putting the child in the cold bath. Remember it is through some error in diet that the child begins to vomit; the bowels move frequently; sunken eyes and depressed fontanelle can be observed. The condition of that child will be that its hands and feet are cold and blue; and if the temperature be taken in the rectum you will find it 103 to 106 degrees. You can reduce this temperature by the cold bath and then administer the calomel and the castor oil, and that may be all the treatment necessary. Abstain from the administration in these cases of opium, but you may use it as the condition becomes chronic; that is a different thing. In these the child wastes away from mal-nutrition and there is a condition of chronic marasmus supervening. In these cases small doses of opium prove beneficial.

Another member of the Association spoke of using the ice cap and cold sponging in these cases.

Dr. Gordon in reply, said that small doses of paregoric are of great benefit still, one should be very guarded in the use of opium in these cases. In regard to the cold bath, he states that he invariably resorts to the use of the cold sponging and lumps of ice to the spine.

A Case of Sub-Cutaneous Emphysema.

Dr. Fred. Fenton, Toronto, exhibited a specimen of tubercle in the lung of a child six months old, and proceeded to give a history of the case. The child was described to him as having been well, until it had reached the age of five months, except for an attack of bronchitis at the third month On Dec. 23rd, last, five days before death, the baby was very restless, but there was no cough to any degree, in fact it was not a marked feature at any time. Swelling was noticed in the greater part of the neck, chest and shoulders passing upwards over the head so that you

could see a large projection over the vertex and then it spread downwards over the chest and abdomen. It was limited to the neck behind. Over the parotid region, it advanced upwards spreading forwards over the cheeks. Passing down the chest wall in front, it became limited at the lower border of the pectoral majors. It passes forwards and backwards to the spine and downwards to the crest of the ilium and over the inner half of poupart's ligaments it escaped. It also spread down the arms to about half-way to the elbow. A post mortem examination was made about six hours after death. The body was not greatly emaciated. The sub-cutaneous tissues were dry and bloodless and the left pleural cavity showed no fluid and no adhesions. The left lung showed many emphysematous blebs of varying sizes and the point of entrance of the air into the pleural sac could not be discovered. The liver and spleen were large and grayish tubercles were scattered over the surface of the latter. There was no gas formation in any of the internal organs. Microscopic examination of the tissues determined tubercle bacilli in the lungs, a few in the liver and spleen and none in the kidneys. The emphysematous blebs could be traced into the root of the left lung. In the right thorax, there were pleural adhesions everywhere especially over the lower and middle lobes and the balance of the lung was literally studded with yellow tubercles. The father, a man of fifty, has suffered from winter cough for years because of chronic bronchitis. No direct evidence of tuberculosis was obtained in the mother, but she is poorly nourished and looks a fit subject for the disease. The production of emphysema is usually described to prolonged and violent coughing, but this was never a feature of the case. The question of infection arises and the history of the whole case points very strongly to such an origin. The presence of tubercle bacilli in the father's sputum, is quite ample to account for the child's infection.

The Successful Treatment of Three Important Cases by the Combined Form of Treatment.

Dr. G H. Burnham, Toronto, spoke of the different forms of iritis with paralysis of the third nerve from specific disease and the great value of the combined form of treatment. These cases often lead to total destruction of vision in the eye and he used this treatment for the sole purpose of putting a stop to relapses. The first case cited was an unmarried woman, 58 years of age. In 1896, the right eye became inflamed and one month later, the left eye also became inflamed. She consulted a specialist in the spring of 1897 and he used the combined form of treatment. In the summer of 1898, there were thirty injections of pilocarpine given. Dr. Burnham stated that with his experience regarding her case, the treatment was wrongly given, and so failed. The left eye had no perception of light, there were tension and blindness and a very shallow anterior chamber. The combined form of treatment was begun at once and it has proven very beneficial in this case. Two other cases were cited and then the doctor detailed his plan of treatment. Pilocarpine

was given hypodermically, the dose being 1-10 to ¼ of a grain at each injection. This is administered in a series of sittings of from ten to fourteen injections, given once a day as a rule. The interval between the series ranges from three to eight weeks, during which time the patient is taking the iodide of potash and the bichloride of mercury internally. Then another series of injections is begun. Before each injection, the patient is prepared in a room with a temperature of seventy-five degrees, lying between flannel blankets and lies on the left or right side as convenient. If he feels chilly and uneasy, the effect is lessened. In winter Dr, Burnham uses a hot water bottle to the feet. The proper effect of the injection is shown by the perspiration and a free flow of saliva, the latter varying from six ounces to a pint. At the end of an hour the patient gets up and dresses. Two hours afterwards he can take his food. The injection is usually given about two hours after the mid-day meal. The iodide and mercury must be given regularly between the series. As to the length of time consumed in this treatment, in some a few months will suffice. In others it is continued for three or four year; and no relapses occur in this treatment. The nervous centres especially of the perceptive system are acted upon in this treatment, especially seen a few hours after the injection. Having then been able to produce an effect upon the diseased tissues, it follows that to keep up this desired action, we must go on using the remedies. In cases of old iritis where there is much damage to vision, the Doctor never does an iridectomy; instead he causes absorption by this method. In other organs of the body it ought to be tried in the same way, and its influence may be as pronounced as on the eye. After ten years of close observation, he thinks he can speak with authority on the subject and of its assured position.

Best Method of Dealing with the Consumptive Poor.

Dr. E. J. Barrick, Toronto, addressed the Association on this subject. He spoke first on the establishment and maintenance of rural sanitaria in connection with the municipality or with a group of municipalities. Then the erection and maintenance in connection with the above, of suitable buildings for the reception and treatment of such advanced cases of the disease as are unsuitable for treatment, was contended for and lastly, the co-operation of the Dominion Government, provincial legislatures, municipalities and philanthropic and charitable individuals in providing funds therefor, should be secured.

Dr. Britton, Toronto, took exception to a remark of the previous speaker, that the door of no sanitarium in this country, was open to poor people, and further stated that it was only a very short time ago since the Medical Health Officer of Toronto had sent a public patient to the sanitarium at Gravenhurst. He thought that a great many of the hospitals of the province should receive and care for these patients in a proper manner. It would be much better if the hospitals did this work instead of building sanitaria for these advanced cases.

SECOND DAY—MORNING SESSION.

Skin Clinic at St. Michael's Hospital.

The skin clinic at St. Michael's Hospital was an important feature of the meeting. Refreshments were served and the members of the Association, spent a very pleasant and profitable hour examining the patients. There were about thirty cases shown, and amongst them were several rare skin diseases such as Dermatitis Herpetiformis, Larva Migrans, Urticaria Pigmentosa, Hydrocystoma, Hydradenitis, Favus, Molluscum Contagiosum and Exfoliative Deramtitis, following psoriasis. Drs. A. R. Robinson, New York, Shepherd, Montreal, Graham, Chambers and A. McPhedran, Toronto, took part in the discussion.

Erysipelas, with Treatment by Marmoreck's Serum.

Dr. A. de Martigny, Montreal. In opening this paper, Dr. de Martigny said that he had occasion to try during the last fourteen or fifteen months this treatment in cases of erysipelas of the face and the result was very good as a rule; but the result also is generally very good by the ordinary treatment. One case in particular was noted, in which for four or five days, tonic treatment with iron and quinine had been tried and a thirty per cent. solution of ichthyol applied to the face, without any good result. The temperature was 105° and the pulse 148, the patient very weak and the face very much swollen. There was also very much suffering, from headache, trembling and fainting fits all the time. 20 c.c. of the antitoxine (Marmoreck's serum) were injected. She was then put to bed and a solution of bichloride, 1:4,000 applied to the face. On the next morning, the temperature was normal and the pulse ninety-six and the pulse was normal on the following days. In five days she could go back to work, though the face was still darkened in some places. Another interesting case was cited in an old lady of sixty-five years of age. She had generally had one or two attacks in the spring or in the fall. Last spring she was given two injections of antitoxine, 20 c.c. each at two week's interval. That case was cured and during the fall she had no attack and this spring no attack either. She was seen two weeks ago and she has never been like that for fifteen years back. He believes this treatment is more powerful in its curative power than the local applications. If we use the treatment as soon as we do for diphtheria, *i.e.*, on the first day, we would get as good results as from antitoxin in diphtheria. This is not a very severe affection, but we sometimes see deaths occurring in erysipelas of the face. Some friends in Montreal stated that we have two cases of death. In the first case not reduced by the ordinary treatment, it would not have been cured by that treatment as quickly as if the old treatment had been continued. He was satisfied with the results and asked the members of the Association to try this treatment when they had a case of erysipelas of the face and report at the next meeting of the Association, twelve months hence.

Dr. R. W. Powell, Ottawa, asked the writer of the paper about the dose of this particular serum, whether 20 c.c. was the standard dose or

whether the dose is altered by the severity of the case, or by the age of the patient, or what rules there are about this treatment.

Mr. Cameron confirmed Dr. de Martigny's findings. He had employed the treatment lately in four or five cases of erysipelas of the face with very prompt results. One patient in particular had seven attacks or relapses in fourteen months, and since using this serum injection, no relapses have occurred.

Sir James Grant, Ottawa, stated that when this society was organized thirty-two years ago, this subject was not even in its infancy. Since then great advances have been made and the observation which has fallen from this gentleman upon this treatment, is one of vast importance and such is the efficacy of the injection, in curtailing or destroying the poisonous condition of the system that produced the erysipelas, that it was almost positive in its character. He trusted that Dr. de Martigny would continue in his observations and throw more light upon the subject He hoped he would be excused for making a personal observation here this morning. In 1860, he received a very severe blood poisoning, and was in a very feeble state of system and near the point of death. In 1863, he was induced to try the influence of the serum of ordinary vaccine, made into solution and injected into the system, which at that time was being used for the treatment of cases of skin diseases, particularly severe forms of psoriasis, with good effect. He published this as far back as 1863. This was the initiatory stage so far as he was concerned, in which serum therapy had been employed for the cure of any disease. He was glad to know that this subject was taken up to such an extent.

Dr. Irwin, Weston, Ont., believed in serum therapy, but it will not cure all cases. He instanced a case of scarlet fever he had had recently under his care, in which the serum employed for that disease had been used, an injection of 10 c. c. After two weeks the child developed erysipelas and in twenty-four hours it was in a very bad stage. Then 10 c.c. of the antistreptococcic serum was injected on the second day but without any result and the child died.

Dr. de Martigny in reply said you can use 10 or 20 c.c.; but we must know that the streptococci are not all of the same kind. There are different families of the streptococcus. It acts on a special family very powerfully. If one of the same nature, we can use very small doses with good results; but the serum is prepared from one family, and thus we must use large doses to have any good effects. Besides that, we must be sure when we employ serum that we use a very powerful one. If we find the streptococcus in the beginning, we find the enemy itself. If we wait too long, then we come in too late, and then if we kill the microbe we have no reason to hope to have any effect upon the toxine itself, only that it must be eliminated by the natural ways, the kidneys, skin, etc. He would like for one to try the serum, the best and most powerful and fresh; and next year after fifty or sixty or one hundred of us have tried the serum and come back a year hence and relate our experiences, then

we will be able to establish a good opinion of the treatment. We will then have something certain about it. It is being discussed about in Europe, and doctors in France pretend that it has great power, and others do not pretend anything about it. It looks as if every one is going to have and expect the same opinion, *i.e.*, if we treat the erysipelas in time.

Complications and Treatment of Fracture of the Skull.

Dr. J. M. Elder, Montreal, read this paper, and stated that it referred to fractures at the base. This last summer, he had under his care in the Montreal General Hospital, a remarkable series of these fractures, no fewer than seven all told, five of them being there at the same time. These series of cases made him study up the subject; and the good results of the routine treatment followed, made him wonder whether we, as general practitioners, were not too prone to think that in this form of injury treatment was useless. Such an attitude is quite as unjustifiable as it would be in a compound fracture of the tibia for instance. The history of one case: H. S., aged eight years, came into the hospital on 30th May last, unconscious, the result of a fall of fifteen feet, striking on the head. There was a large haematoma about the parietal bone and a depressed fracture above the left ear; pupils widely dilated; blood issuing from nose and ears; pulse weak; respiration shallow. Vomiting of bright red blood in small quantities. Examination of the throat with mirror showed the blood dropping down from the pharynx. There was a fracture through the middle fossa of the skull, involving both ear and nasal fossa. Something had to be done at once. He quoted Shephard's case where he ligated the common carotid artery. He then ligated the left common carotid artery in this case and put the patient to bed. She regained consciousness on the third day and the temperature kept fairly good, but on the twelfth day she developed thrombocis in the superior longitudinal sinus, with oedema along the forehead. On the sixteenth day another rise of temyerature and thrombosis of the left cavernous sinus, followed in a day or two by thrombosis of the right cavernous sinus. A study of the consequence caused by this was very interestiug. She left the hospital perfectly well, in twenty-six days, and continues well. The child is perfectly well now. He stated that in Dr. Shepherd's case some mental trouble developed afterwards, and he is watching this case with that end in view. The other six cases are pretty much of the same nature. In all the cases the following general plan of treatment was followed out. First, absolute rest in bed; second, quiet was enjoined, and the patient should be kept, preferably, in a dark room; third, the ice pack was kept to the head continually; and fourth, the ears were thoroughly syringed out and packed with sterilized gause. The nose was sprayed every four hours with the following solution: biborate of soda and sod. bicarb. of each 3 grs., glycerine and water 1 oz. The mouth was cleansed every two hours with solution of 45 grs. chlorate of potash, 20 minims HCl, 4 drs. glycerine, in 10 ozs. of water. Food was given per rectum for several days. Peptonized beef and brandy was well borne when given in this way. Can one always be sure that you have a fracture of the base to

deal with ? The signs of fracture of the base are often equivocal. Some of the evidences of severe brain injury are bleeding from cranial orifices and the demonstration of cerebro-spinal fluid, and if this latter, then you can be almost sure that you are dealing with a fractured base. Fractures of the vault, too, often extend to the base, What are the dangerous complications of fracture of the base of the skull ? Hæmorrhage may result from the fracture involving some of the arteries entering the base of the skull, Treatment must be directed to the control of this by every and any means possible. The next danger, of course, is sepsis; the fracture may become compound, communicate with some of the cranial canals, thus communicating with the outer air. Most fractures involving the middle and the anterior fossae, generally communicate with these cavities. If the fractured skull is kept aseptic it will heal kindly as other bones treated in the same way. Opium is indicated if the patient is violent. It quiets him. Above all, keep the patient free from all excitement, whether of sight, sound or mental production. Exclude the pettifogging lawyer who is so anxious to have the case.

Dr. Lett, Guelph, Ont., asked how long it was from the time the common carotid artery was tied before symptoms occurred, because it strikes him that in many of these cases of injury to the skull that the injury itself, while it leaves no symptoms for a short time from the result of healing, the impinging of the membranes on the cortical substance, that years after the patient will get mental troubles, whereas there are no mental troubles during the acute stages of the injury ; and he would like to know if it was a short time or a considerable interval that elapsed before the mental symptoms appeared.

Dr. E. Hall, Toronto, asked what were the causes that led him to select the left carotid in this case, and where there are symptoms of internal without external hæmorrhage what would be the surgical indications.

Dr. Harrison, Selkirk, Ont., stated that he was going to ask the same question that Dr. Lett asked. He has seen cases in which injury of the bones of the skull occurred and there was no ligation of the carotid artery and in which there was perfect restoration to health, but over a year afterwards these symptoms supervened, and when Dr. Elder was reading his paper, when he was saying that he was going to watch for further symptoms and to see whether tying the carotid artery affected the mental processes afterwards, when the result would be much more likely to happen after the injury to the brain than the tying of any blood vessel after the injury.

Mr. Cameron has tied the common carotid artery on both sides, and no mental symptoms followed. The mental symptoms are due probably to the traumatism.

Dr. Shepherd, Montreal, stated that his case which Dr. Elder referred to was a case of ordinary hæmorrhage, which came on after the accident, with gradual loss of consciousness, and then he operated and found a large

clot at the base of the skull. The hæmorrhage was so profuse that he tied the common carotid immediately. There were no mental symptoms afterwards in this case.

Dr. Elder stated that he understood that Dr. Shepherd's case had developed mental symptoms just very recently.

Dr. Atherton, Frederickton, N.B., stated that he had the good fortune to see the carotid artery tied on a medical man of St. John, N.B., and no mental symptoms followed, and if any of the gentlemen present heard this doctor speak on a medical or political topic he would conclude that his mental faculties were all right.

Dr. Bell, Montreal, spoke of this modern view of treating these cases and thought that certainly many cases can be relieved by prompt interference, and such treatment as in other cases prevents sepsis. With regard to later consequences we cannot do much to avert these at all These are produced at the time of the fracture, and he cannot see that we can really do anything to avert these. Do not let the patient die of hæmorrhage nor of sepsis. The great point is to know when to interfere and to interfere promptly.

Dr. Elder, in reply, said in regard to the question of mental symptoms, he possibly might be in error about Dr. Shepherd's case, although he had heard that Dr. Shepherd's patient had gone insane. His own opinion is that it is not likely to lead to any bad results. In children we may reasonably hope for better results. In regard to the mental symptoms following fractures, that they do supervene there is not much doubt. Adhesions form between the meninges of the brain, and will lead to convulsions and the paralytic seizures. Some of these symptoms supervene two years after the injury, and it is our duty to watch and see if there is any connection between the two. The reason the left carotid was taken was because the injury was on the left side.

Observations on Adenoids and Enlarged Tonsils and their Removal, with Notes.

Dr. D. J. Gibb Wishart, Toronto, in reading this paper said that the cases occurred in the service of the Hospital for Sick Children, and thought that few practitioners have a due conception of the enlargements of these lymphoid tissues. The cases occurred in the years from '96 to '99, and the total number of cases operated upon was 103. Of these 47 were males and 56 females. The faucial tonsils alone were enlarged in 16 females, adenoids in 14 females. Twenty-four per cent. were under five years of age; 24 per cent. were over ten years, and 52 per cent. between five and ten years. He examined some of these some years after the operations, but in only 16 cases could he get an examination and only four of these showed any return of the disease. There were five cases that had been previously operated on by other operators; then there were two deaths, both due and traceable to the anaesthetic These figures emphasize the fact that the disease is very prevalent. They were b ought for treatment because some function of the respiratory tract was being

interfered with. Perhaps a larger number still complained of uneasy or oppressed breathing, especially during the hours of sleep. Again nasal symptoms or eczema of the edges of the nostrils were most pronounced, and the child had frequently persistent continuous cold in the head. Then it is frequently difficult to get a clear history of these cases; the mother is careless; heredity can be traced. As will be seen from the figures given above, 47 per cent. of the cases presented enlargement of both third and faucial tonsils. In other words there was disease of the third tonsil in 70 per cent. of the cases and of the faucial tonsils in 53 per cent. As adenoids are concealed from view they very often escape notice. In the diagnosis of these he found the facial expression most useful; the nose is flattened between the eyes. If the nose is well formed and adenoids are present, the obstruction is only partial. The presence of the open mouth, or the constant keeping of the lips slightly apart, when the child is in repose, is also important. In the examination of the pharynx, the soft palate often presents the appearance of paresis, as if pressure were on the upper surface. Actual sight, however, is the best means of diagnosis. If you fail after the first time with the mirror it is useless to try again, because the child is frightened, and force employed means that hereafter you cannot get its consent. Never hurt the child if at all possible. Don't use the bivalve speculum. The trained eye may be assisted by the use of a long angular probe. The enlargement of the pharyngeal tonsil is as a rule easily seen. The tongue should be depressed in such a way as to prevent gagging, and it can only be brought into view when the tongue is deeply depressed. A good transmitted light should be employed. When enlargement of one or other of the glands exists, it is generally wise to attempt to reduce the condition by astringent sprays and tonic treatment. Every case requires careful consideration of all details. Don't advocate that every tonsil be removed by the knife if it protrude beyond the faucial pillars. When an operation is deemed needful it should certainly be performed under anaesthesia, and the anaesthesia should be sufficiently profound to permit examination. In the simple cases he has used nitrous oxide, but the time limit is too short as a rule—40 to 50 seconds—to secure thorough work. With regard to the position of the patient, the head should be allowed to fall over the end of the table after the tonsils are removed, and then the adenoids taken out. Severe hæmorrhage following operation has been reported, but in cases of my own no such hæmorrhage gave rise to any alarming symptoms. We might, however, meet with this at any time, because we do not know when an artery may be misplaced; in most cases, however, the loss of blood is very considerable. Out of the total number operated on, two resulted fatally; but in neither of these could the death be due to the operation. In 85 per cent. of the cases, no subsequent history has been obtained, so the percentage of cures would be over 90 per cent. As a rule, when a cure has not been obtained the Doctor feels convinced that there must have been some defect in the operation. He removes the left tonsil better than the right and a small portion of the adenoid enlargement may easily escape attention. The healing process will beslow, and in most which remain will continue large

and take on new growth. The use of the spray to cleanse the parts should always be insisted on. The tonic effect upon the patient, the results of operation, is always striking.

Dr. Snider, Brussels, Ont., asked whether the administration of an anæsthetic was more dangerous in these operations for the removal of tonsils than in other cases.

Dr. Wishart: One has difficulty in knowing beforehand, how long a time it will take to remove the adenoids, and they may prove troublesome, and then again they may come out in one entire mass. The 45 or 50 secs. which the gas gives you will be amply sufficient for the work, but if for any reason you are not satisfied with the thoroughness of your operation, you are put in the position that the patient is bleeding and out of the anæsthetic, and you don't get as good results. With regard to the danger of the anæsthetic, of course it is certainly true, that a patient suffering from these, takes the anæsthetic badly, but that is not a sufficient reason to prevent one using the anæsthetic, if you are thereby going to secure a much more thorough operation. So far as the effects upon the patient who died under chloroform are concerned, it did not seem to be in any way due to the operation. The patient had taken it on two or three other occasions, but in this case the patient collapsed.

Dr. Ernest Hall, Toronto, spoke of the change in the mentality of these patients after operations.

Sir William Hingston: He was sorry Dr. Wishart did not confine himself to one of the two subjects, because the remarks to one do not apply to the other. With regard to adenoids, it occurs to him that as soon as we recognize these growths, we should operate on them as soon possible for their removal. There is nothing to be gained by waiting, but in the case of the tonsils it is entirely different. Some operate there altogether too frequently. He stated he had seen whole families with enlarged tonsils, and when they grew older they came down to their normal condition. He has seen the tonsils almost meeting, and yet has hesitated to remove them. While he thoroughly agrees to have the adenoids removed, with the tonsils, the thing is entirely different. He took exception to the use of the spray after the operation and would ask what can be gained by the use of the spray. The membrane of the nose is unaccustomed to it. For years, he has not used water, medicated in any shape to get at the nasal cavities; instead, he uses powders. He considered the employment of the nitrous oxide gas in these cases useless, as there was insufficient time for the operation. He is most favorable to chloroform and does not think it is more dangerous than in any other cases. We have got to see that the blood does not get down into the breathing apparatus.

Dr. Wishart said that he did not mean to infer that the tonsils should be removed in every case; it is simply a matter of judgment how far they are interfering with the breathing. With regard to Dr. Hall's remarks, with reference to the clearing up of the mental condition, every surgeon knows that there is always a marked improvement after these operations, especially after adenoids have been removed.

Tuberculosis and Insurance.

Dr. John Hunter, Toronto, discussed the affects of family history of tuberculosis and its bearing upon applicants for life insurance. Of course there can be no two opinions about it that it is the first and imperative duty of the physician to make an honest examination of the applicant for the medical director of the insurance company; it is due to the applicant as well that he should receive the benefit of the advanced medical knowledge of the day. The purport of the paper was to invite discussion that might be used to define more clearly where we are at with reference to the relationship between tuberculosis and insurance. To what degree does the presence of tuberculosis in the individual or in the family history justify the applicant's rejection. First, he spoke in reference to the tuberculous subject and the question of heredity and the family history of those under thirty years of age, especially on the maternal side, and second, of those who have an acquired physical condition that would predispose to the disease. After this class there are those over thirty years of age. He then took up the questions of environment, physical conditions and hereditary tendencies, and stated that the trend of scientific opinion of the day was in favor of the opinion that the disease was not hereditary. The direct transmission of the tubercle through parental channels is of very rare occurrence. He quoted Dr. Bryce who had made the statement 80% of all deaths from tuberculosis occurred amongst working classes, or in those working at trades.

Dr. Benedict, Buffalo, thought that the heredity of tuberculosis was very much like the heredity of scarlet fever, that it was a question rather of infection, but with a longer period of incubation.

Sir William Hingston thought that the idea of heredity had done an enormous evil to society. For instance, a beautiful young girl is about to be married; a whisper goes around that the disease may be transmitted—the marriage is cancelled thereby.

Sir James Grant advocated the formation of a National Society like that promulgated by Sir William Broadbent in England, and presided over by H. R. H. the Prince of Wales.

Dr. Bryce thought that if this Association could form a society to assist the government of the country, it would be accomplishing much. Formerly it was thought that there must be some hereditary taint in the family history. Now it is a question of transmission by and through infection. The Government of Ontario ought to have inspectors in the various institutions of our country, in order to see if there is a solitary case of tuberculosis, either among the teachers or students, and have such individual removed. We know perfectly well that one small bit of sputum lodged and dried up and disseminated throughout the atmosphere may be the means of producing a thousand cases. Too much care cannot be devoted to this subject, particularly in our steamers and in the railway cars also. When we find the mortality so great in this province, it behooves every man to look carefully into the subject, and see what can be done towards it prevention and eradication. Another point, in regard to the sale of milk, licenses ought not to be granted to milk dealers until their cattle and premises have been thoroughly inspected.

Cyst of Broad Ligament.

Dr. Chas. Smith, Orangeville, reported this case and described the difficulties encountered in the removal of the tumor. At the time of the operation the woman was 53 years of age and the mother of nine children. She had been growing in girth for some years, but thought that she was getting fat only. Increasing dyspnœa however soon rendered her life intolerable; then she decided to have the operation performed. The appearance of the growth was a bluish vascular-looking tumor. There was no secondary growth. An incision five inches in length was used and even then there was a considerable difficulty in performing the operation properly. An uninterrupted recovery took place and the patient enjoyed good health until her death from apoplexy five years subsequently.

SECOND DAY—AFTERNOON SESSION.

Implantation of the Ureters in the Rectum in a Case of Exstrophy of the Bladder, with Patient.

Dr. Geo. A. Peters, Toronto, exhibited the patient and fully described the two operations he had performed on this subject. In addition to the exstrophy of the bladder, the patient had also had procidentia recti, and was therefore a great source of trouble and annoyance, disgust and loathing to his friends. The resulting deformity from this condition would be such as would be produced by taking away the anterior wall of the abdomen, below the navel. There is then exposed to view the posterior wall of the bladder, with the mouths of the ureters filling in the space between the wide separated walls. In this case he has removed the exstrophy of the bladder altogether. The scrotum is present and the testacles are descended. The condition is a congenital one, and due to defective development in the uro-genital parts. At the age of 2½ years the boy first came under the doctor's notice; he is now 4½ years. All the organs and limbs were perfectly formed with this exception. On the broad, flattened and shortened penis, a groove descended down to the extremity thereof, the under skin of the urethra being exposed and also the mucous membrane of the posterior wall of the bladder. A rudimentary prostate could be seen, and at the lower part of the bladder wall the openings of the ureters could be detected. Around these there were excrescences, mucous in character. The surrounding skin showed very little irritation, though it was constantly bathed in the escaping urine, though the escape of urine was not constant. When the surface was dried it would remain dry for 15 seconds to 1 minute. A fine probe was inserted into these openings of the ureters, passed almost directly backwards. Both kidneys were somewhat prolapsed as could readily be determined under chloroform. Generally speaking, in these cases, the testicles have not descended. There was an entire absence of the pubic symphysis. With the finger in the rectum, one can draw forward and easily detect that there is no symphysis pubis whatever. The projection of the prolapsed rectum came down to his knee. The mucous membrane of this was irritated and tenesmus was frequent and caused suffering.

The procidentia could be easily returned and the sphincter had some contraction, but when the hand was removed it would return. This condition called for immediate relief. Dr. Peters here exhibited to the meeting the result of operative procedures, which certainly was very gratifying to the patient, the parents and also to the surgeon. A description of the operation for the exstrophy of the bladder followed. The operation was done extra-peritoneally, and this operation would seem to hold out hopes, but the mortality is high. The ureters were fixed into each side of the rectum and almost immediately the rectum manifested a tolerance for the urinary secretion. In 48 hours after the operation the bowels moved, and after that the child got along without any difficulty. It is now five weeks since the operation was done and the bladder has all gone. Now, his urine is passed into the rectum, and almost immediately it manifested a tolerance for the urine. He can go from three to five hours. That day he had gone from 8 a.m., then at 11 a.m., and again at 2.30 p.m., and at night he will go from four to five hours without passing anything from the bowel at all.

Dr. Cameron thought that this operation was bound to become the operation of the future. He instanced a case in which he had done this operation for a woman, in whom it had existed for 19 years. A good many of these operations have all proved failures.

Dr. Bell, Montreal, congratulated Dr. Peters upon the result of this case. He considered it a surgical triumph. The operation for the re-plantation of the uterus has been done for a good many things; and the question of the tolerance of the urine in the rectum is still a much discussed question. The results shown in this operation are good.

Dr. Shepherd thought that the operation was an ideal one and congratulated Dr. Peters upon the great success he has obtained in this case.

Dr. Peters, in reply: There is one point we must not lose sight of, that there is danger of death from ascending pyelo-nephritis. When the operation has been done in animals, that has been the cause of death. When contraction occurred the ureter in the rectum, would have a papilla. If we have a papilla projecting into the rectum, it mitigates the danger.

Co-operation of Surgeon and Physician in Abdominal Cases.

Dr. A. L. Benedict, Buffalo, in a very interesting paper discussed this question. He instanced cases where the two should co-operate, such as cancer of the cardia, etc., and then proceeded to discuss the diagnosis of these tumors. He thought that very often the patient would benefit if, after the operation, he was handed over to a medical attendant for care and attention.

Sir Wm. Hingston deprecated cutting into the abdomen before a diagnosis had been arrived at.

Gall-Bladder Surgery.

Dr. J. F. W. Ross read a highly interesting paper on this subject He exhibited a cabinet of gall-stones taken from patients on whom he had operated, and also a mucous fistula in a gall-bladder specimen. He

dwelt upon the difficulty often encountered in extracting these stones from the common duct, and exhibited an instrument he had devised for this purpose.

Dr. Holmes and Prof. Beall discussed this paper.

Address in Surgery.

Dr. W. B. Coley, New York, delivered a classical and scholarly address on the radical operation for the cure of hernia. He traced the rise and progress of the operation from the earliest times, apportioning, as he proceeded, the credit for any improvements. Coming down to modern times, within the last decade, he spoke of the different operations of Bassini, Mitchell, Banks, Kocher and Halsted, and concluded with a special reference to the operation for femoral hernia and a word or two about umbilical hernia, which did not generally require operative measures for its cure.

Vote of Thanks.

Moved by Dr. Shepherd, Montreal, and seconded by Dr. Peters, Toronto, that this Association extends its thanks to Dr. Coley for his admirable address. Carried unanimously.

THIRD DAY—MORNING SESSION.

Anaesthesia by Chloroform and Ether.

Dr. W. B. Jones, Rochester, contributed a very interesting paper on this subject. We should know the total solids excreted in the 24 hours. Heart murmurs make no difference. The condition of the muscle and the arteries is more important, and whether filled with good blood. Any adhesions in the lungs should be ascertained. Also note any deformities and partial paralyses. It is not necessary to smear vaseline all over the face, and it is better not to administer any drugs beforehand. The hypodermic syringe loaded with a solution should always be at hand. The administrator should be thorough master of himself and permit no interference on the part of the operator. He should pay particular attention to the work he is doing and have no regard to the procedure of the operation. About eight drops per minute is the proper dose to keep up the anæsthesia. He has seen four drops per minute maintain anæsthesia for half an hour. The patient should be made comfortable, so that there will be no pressure on the chest or any interference with the breathing in any way; and the hands should not be permitted to hang over the sides of the table. He should be ever on the *qui vive* for emergencies.

Some Observations on the Treatment of Cancer.

Dr. A. R. Robinson, New York, spoke of the epitheliomata which could be better treated with a paste than with a knife, as for instance those situated around the nose and face and on the scalp—in parts where it is impossible to make a deep incision if the knife were used. The

paste employed was an arsenious acid one, with equal parts of gum acacia, made of the consistency of butter. This paste should be applied and left on from 16 to 18 hours before you get the right effect. From this you will get a complete necrosis *en masse* with a resulting inflammatory process, which however is limited and simple. Then you will get healing by the process of granulation.

Dr. Shepherd thinks that in the majority of cases the knife should be used, with the exceptions as stated by Dr. Robinson.

Dominion Registration.

Dr. Roddick introduced this question in a speech of some length and power. He traced the rise of the agitation from confederation, and proceeded to outline the scheme for a Dominion Medical Council. Each province was to have three representatives on the central board, one nominated by the Governor-in-Council, one by each provincial medical council and the third was to be the president of each provincial medical council *ex officio*. Any practitioner in good standing, who has been a licentiate for ten years, could at any time go bef re the central body and receive a license to practice in any province in the Dominion—and no practitioner could do this until such ten years had elapsed. The present provincial councils were to remain as they are.

Dr. Williams, Ingersoll, Ont., representing the Ontario Medical Council, then took the platform and moved the following resolution:

"Whereas, the standards of education for the profession of medicine and surgery and the qualifications for the practice of the profession vary in each of the provinces of Canada, and the assimilation of these standards, and, if practicable the establishment of uniform standards throughout the Dominion are desirable;

"And whereas, in consequence of the provisions of the Acts of the United Kingdom of Great Britain and Ireland, known as the 'Medical Acts,' medical and surgical practitioners, who are by the law of a province of Canada, entitled to practise the profession in such province, cannot obtain the benefits of registration under the said Acts, inasmuch as by the said provisions, the qualifications required for such registration must be regulated by the Parliament of Canada;

"And whereas medical and surgical practitioners duly registered according to the law of one province of Canada cannot legally practice in another province without being duly registered in such other province;

"And whereas, serious practical inconveniences, both to the public and to medical and surgical practitioners, have arisen from the above cause;

"And whereas it is desirable to assimilate and, if possible, to unify the various standards of qualifications established by the several provinces of Canada as conditions of admission to the study of the profession and to the practice thereof, such assimilation and unification being best obtained by the establishment of some central authority with power to

hold examinations of, and to establish and maintain a system of medical registration of, such persons who desire to practice the profession in more than one province of Canada;

"And whereas it is not within the legislative jurisdiction of the provinces of Canada to establish such central authority, the jurisdiction of such provinces being restricted to the limits of the province and to provincial objects only;

"And whereas it is expedient to constitute a corporation in which the legislatures of the various provinces may, if they see fit so to do, vest such powers as are necessary to affect the above purposes, and other purposes mentioned in this Act;

"And whereas the appointment of such an authority is for the general benefit of Canada, and would promote the advancement of medicine and surgery throughout the Dominion of Canada;

"Therefore be it resolved, that this Association heartily approves of the proposed scheme which the committee have formulated and presented at this meeting;

"And further resolved, that Dr. Roddick be empowered and requested to continue his efforts to have the scheme completed and carried into effect, by such legislation as may be found necessary."

Dr. McNeill, Prince Edward Island, seconded the motion of Dr. Williams, and stated that the movement had his hearty support.

Sir James Grant, Sir William Hingston, Dr. N. A. Powell, Toronto; Dr. Powell, Ottawa; Dr. Harrison, Selkirk, Ont., and Dr. Lafferty, Calgary N.W.T., spoke to the resolution.

It was then put to the meeting and carried unanimously amid great enthusiasm.

The President appointed George H. Carveth and J. T. Fotheringham auditors.

Dr. McNeil moved that the report of the Nominating Committee should be received now. Carried.

Dr. Roddick, the chairman of that committee then presented his report: Ottawa was selected for the next place of meeting.

President—R. W, Powell, Ottawa.
Vice-President for Ontario—A. J. Johnson, Toronto.
Vice-President for Quebec—A. R. Marsallais, Montreal.
Vice-President for New Brunswick—Dr. Myers, Monckton.
Vice-President for Nova Scotia—W. G. Putnam, Yarmouth.
Vice-President for Pr. Edward Island—S. P. Jenkins, Charlottetown.
Vice-President for Manitoba—W. J. Neilson, Winnipeg.
Vice-President for Northwest Territory—Hugh Bain, Prince Albert.
Vice-President for British Columbia—O. M. Jones, Victoria.

Local Secretaries:
Ontario—W. N. Klock, Ottawa.
Quebec—J. A. Hutchinson, Montreal.

New Brunswick—G. A. B. Addy, St. John.
Nova Scotia—G. M. Campbell.
Prince Edward Island—H. D. Johnson, Charlottetown.
Manitoba—Harvey Smith, Winnipeg.
Northwest Territory—M. M. Lyman, Q'Appelle.
British Columbia—Dr. McGuigan, Vancouver.

Treasurer—H. B. Small, Ottawa.
General Secretary—C. R. Dickson, Toronto.

Dr. McNeill, P.E.I., moved in amendment that the name of F. N. G. Starr be substituted for that of C. R. Dickson, and that the report be then adopted. This was seconded by Dr. Chown, Winnipeg and was carried unanimously.

THIRD DAY—EVENING SESSION.

Report of Committee on Inebriates.

Dr. James Thorburn, the chairman of this committee, submitted their report, which reads as follows:—

"Your Committee to whom was referred the question of the treatment of pauper inebriates, at the last meeting of the Canadian Medical Association, begs leave to report as follows:—

"At the Quebec meeting of this Association, a paper by Dr. A. M Roseburgh, was read by the secretary on this subject. This gentleman has for years taken a deep interest in the reformation of inebriates and about 18 months ago was commissioned by the "Prisoner's Aid Association of Canada to visit institutions and interview specialists with a view of enabling him to formulate a plan for the economic treatment of pauper inebriates. After visiting eight special institutions and conferring with the best known specialists in Canada and the United States, he found that about 34 per cent. of those subjected to scientific treatment appear to be permanently relieved from their infirmity. This percentage, he is convinced, may be very materially increased by the adoption of a modification of the Massachusett's Probation System—changing the environment of the patients and exercising judicious supervision subsequent to treatment. While he has for many years recommended reformatory treatment with prolonged detention for the more hopeless class of inebriates, he is convinced that, for the incipient drunkard and the more hopeful class a few week's hospital treatment will be effective in a large percentage of cases more especially if the case be followed up by judicious management subsequent to treatment.

"Since the paper referred to was read at Quebec, the matter has been considered by the Ontario Medical Association and the plan therein outlined, was fully endorsed and also commended to the Ontario Government for adoption. We learn that influential members of the Ontario Government to whom the scheme was submitted at an audience given by them to a committee of the Ontario Medical Association, expressed themselves as being very favorably impressed therewith and that they were disposed to recommend its adoption in Ontario.

"The scheme endorsed by the Ontario Medical Association and recommended by the Ontario Government briefly stated is as follows:

'A.—The appointment by the Provincial Government of an inspector of inebriate institutions. This inspector should be a qualified medical practitioner, who has made the medical treatment of inebriety a special study.

'B.—The inspector should organize in the city of Toronto, a hospital for the medical treatment of pauper inebriates of the more hopeful class, and in other cities of the Province, an inebriate department in the existing general hospitals.

'C.—The inspector should also arrange in connection with each institution, where inebriates are received and treated, an organization or agency for the adoption of the probation system and giving a helping hand to the patients subsequent to treatment for inebriety.

'D—The inspector should provide for the adoption of a rational course of medical treatment for inebriates in accordance with the tenets of legitimate medicine only, to the exclusion of the use of any proprietary remedy.'

"Under the circumstances here cited, we beg leave to make the following recommendations:

'1.—While we are of the opinion that for the successful treatment of confirmed drunkards, prolonged removal from temptation in a properly equipped reformatory is very desriable if not absolutely necessary, we would nevertheless be disposed to endorse the plan herein outlined for the economic treatment of pauper patients of the more hopeful class, either in cottage hospitals or in a special department of general hospitals.'

'2.—In case the plan of treatment of inebriates here referred to should be undertaken either by the Ontario Government or by any of the other Provincial Governments, we bespeak for it the cordial co-operation of every member of the medical profession who is in a position to favor this important undertaking.'"

Respectfully submitted,
(Signed) Jas. Thorburn.
J. George Adami.
W. S. Muir.

Dr. Thorburn moved the adoption of this report, seconded by Dr. McNeill, Charlottetown, P.E.I. Carried.

Resolution re Tuberculosis.

Moved by Dr. P. H. Bryce, and seconded by Dr. Jas. Thorburn:

"That in view of the general expressed belief of the medical profession and by members of this Association, that bovine tuberculosis is directly concerned in the diessemination of tuberculosis in man, and recognizing the practical character of the several scientific and sanitary measures, to-day available for limiting the prevalence of the disease in

cattle, the Canadian Medical Association does hereby urge, that the Federal Department of Agriculture, and the Agricultural and Public Health Departments of the several Provinces confer together with a view to elaborating a scheme whereby conjoint action can be instituted so that these several existing laws may be so harmonized as to be made operative towards the eradication of tuberculosis in Canada." Carried.

Notes on recent European Conventions.

Dr. R. A. Reeve, Toronto, gave at some length an account of the International Otological Congress, the Ophthalmological Congress and the section on Ophthalmology of the British Medical Association, paying particular attention to the addresses of the presidents and the subjects connected therewith. He also spoke of a paper in reference to the use of various silver salts in conjunctivitis, especially argentin and protargol, which are as effective and much less irritating as silver nitrate. In reverting to the British Medical and the section on ophthalmology, he referred to the address on "Injuries of the Eye" and took up the question of sympathetic ophthalmia and said that this dread disease was a sort of malignant inflammation, which with very few exceptions destroys the sight of the eye.

President-elect.

Dr. R. W. Powell, Ottawa, the newly elected President, was then introduced to the meeting and in the course of a happy and appropriate speech, took occasion to thank them for the great honour they had conferred on him that day, and said he could assure them that the profession in the city of Ottawa would spare no pains to make the meeting next year, in 1900, the most successful one in the history of the Association.

Surgery among the Insane.

Dr. A. T. Hobbs, Asylum for Insane, London, Ont., said that this was a subject that had now attained some considerable width. In order to secure successful treatment, you must have the patient's confidence and co-operation, and with the absence of trust on the part of the patient, it is difficult to produce satisfactory results. The surgeon must be ever ready to depart from the beaten track of routine treatment, and initiate new methods for dealing with these patients. We have encountered all kinds of difficulties in the London Asylum, and experience has taught us how to meet these. First, there is the difficulty of diagnosis. Very little reliance can be placed upon subjective symptoms as seen in the insane. Their suspicions are often aroused by a simple examination of the chest, so one can imagine how difficult it is to secure a gynaccologic examination except with the aid of anæsthesia. Chloroform was first used but this had to be abandoned as artificial respiration had to be resorted to, in many cases. Chloroform is a dangerous anæsthetic to use upon the insane. Ether has given satisfaction and more so when there is preliminary narcosis with nitrous oxide gas. We never remove a healthy ovary or-

healthy tube. Particularly in operations for inflammatory diseases of the ovaries, tubes, uterus and cervix, there have succeeded surprisingly good results, mentally. In fibroids and in the repair of lacerated perinei, the results are not to be compared with these.

Dr. Ernest Hall, Toronto, thought that 92 per cent. of insane women have pelvic disease.

Craniectomy for Microcephalus.

Dr. W. J. Wilson, Toronto, presented the patient operated on and spoke of the conditions before and after operation. A male child, aged four years, was brought to him in April last. He had then been taking thyroid extract for nine months, commencing with five-grain daily doses and gradually getting up to 20 grains per day. He was in a very poor condition. He walked bent forward almost at a right angle, was very excitable, nervous and always on the go, restless, sleepless and could only say one word "mamma." It was "mamma" for this and "mamma" for that and for everything. The operations were done on him in four stages with the object of preventing shock, We removed a piece of bone 1 x 2 inches and the next morning he sat up in bed and tried to sing. He is very apt at picking up a tune; he can pick it up at once. Since operation, five months ago, he has learned quite a number of words. He walks in an upright position and is very much improved in many ways.

Committee on Consumptive Poor.

Moved by E. J. Barrick, Toronto, and seconded by R. W. Powell, Ottawa, that the following members together with the mover and seconder, constitute a committee and report at the annual meeting of the Association in 1900, upon the best means of dealing with the consumptive poor, including the providing the necessary funds therefor:—Drs. P. H. Bryce and William Oldright, Toronto; J. A. Williams, Ingersoll J. George Adami and H. LaFleur, Montreal; J. Lafferty, Calgary, N.W.T., and H. H. Chown, Winnipeg. Carried.

Bovine Tuberculosis.

The following resolution prepared by Professor J. George Adami, Montreal, was then moved by Dr. Wishart and seconded by Dr. N. A. Powell:

That whereas, tuberculosis in cattle is disseminated by contact and infection from beast to beast, and

Whereas: such bovine tuberculosis is prevalent to a very notable extent in other countries, and

Whereas, up to the present time the Dominion is relatively free from the disease—in this presenting a marked contrast to other countries

Resolved, that the Canadian Medical Association is prepared to cordially support the Minister of Agriculture and the Dominion Government in all steps taken to secure a rigorous quarantine, of all cattle entering

the country, both from across the sea and from over the border; and, further, believing that the disease is eradicable, humbly begs the Government to take steps to rid the country of this disease, believing that if this be accomplished, incalculable benefit will accrue to the great agricultural industries of this country and to the health of the Canadian people. Carried.

Dr. R. A. Reeve moved, seconded by Mr. Whiteman, that the usual honorarium be paid the general secretary. Carried.

The treasurer's report showed that 241 members were present at the meeting, and thirty-odd visitors.

There was a balance of cash in hand of $249.00.

Vote of Thanks to Dr. Roddick, M.P.

Moved by Dr. Lafferty and seconded by Dr. Muir, that this Association wishes to place on record, its high appreciation of the efforts of Dr. Roddick to bring about a general registration act which will apply to the whole Dominion, and to express its deep gratitude and obligation to him for his untiring and unselfish zeal in bringing the matter to its present successful stage, and to express the hope that he will be able to secure the passage of an Act of the Federal Parliament at its next session which will be acceptable to all the provinces. Carried.

Deceased Past-Presidents.

Moved by Dr. R. A. Reeve and seconded by Dr. Atherton, that a memorandum, to be prepared by the President, be incorporated in the minutes and proceedings in regard to the lamented deaths of these ex-presidents, Dr. J. E. Graham, Dr. H. P. Wright and Dr. J. H. Mullin, and that an official expression of sympathy be sent to the widows of our late confreres. Carried.

Thanks to the Minister of Education.

Moved by Dr. Williams and seconded by Dr. Roddick, that the thanks of this Association be tendered the Minister of Education for allowing us the use of the Normal School Theatre during our meeting. Carried.

Thanks to the Industrial Exhibition Association.

Moved by Mr. J. W. S. McCullough, Alliston, Ont., and seconded by Dr. Harrison, Selkirk, Ont. Carried.

Thanks to the City Council, Toronto,

Were also moved and carried.

The report of the Committee on By-laws was then taken up and as amended finally adopted.

DISEASES OF THE RESPIRATORY SYSTEM.

BY HECTOR MACKENZIE, M.D., F.R.C.P.,

(Assistant-Physician to St. Thomas's Hospital and to the Brompton Hospital for Consumption; Lecturer on Pharmacology and Therapeutics at St. Thomas's Hospital).

Belladonna is a remedy somewhat undeservedly out of fashion in the treatment of asthma. It was highly valued by Hyde Salter, and it, as well as its alkaloid atropine, was much used by Trous-eau. Of late stramonium has, to a large extent, taken its place. The pharmacological effects of belladonna and stramonium are so similiar that it is difficult to see why stramonium should be more effective than belladonna. Professor Carl v. Noorden has gone back to the old remedy, and reports very favourably on the treatment of asthma by means of atropine (*Therap. Monatsh.*, Oct., 1898). He begins with daily doses of ½ mg. internally and increases the dose every second or third day by ½ mg. until the patient is taking 4 mg. a day, corresponding to 6 minims of liq. atropinæ B.P. After a time the doses are gradually diminished again. The duration of the treatment lasts, as a rule, from four to six weeks. Profes-or v. Noorden recommends a second and sometimes a third course of atropine treatment at an interval of six months, the duration and the dose being less than during the first course. He says the dose of 4 mg. a day is borne surprisingly well. With the exception of slight dryness in the throat and disturbance of accommodation, not the slightest ill effects have been produced. The heart-rate remained normal Professor v. Noorden advocates, however, that patients undergoing the atropine cure be kept under close supervision. It was noted that in two patients, who had eosinophile cells in large numbers in the blood, the number of these cells quickly diminished after the commencement of the atropine treatment, and subsequently did not increase again.

In connection with the use of atropine in asthma we may allude to the account of the effects of belladonna in the treatment of broncho-pneumonia in children, published by Dr. J. A. Coutts (*Brit. Med. Journ.*, Jan. 28th, 1899). Dr. Coutts is an advocate for large doses of this drug. He gives ¼ gr. of the extract every three or four hours, making no distinction in dose as regards the age of the patient, the babe of a few weeks receiving as much as the child of six or seven years. With this treatment Dr. Coutts tells us that there has been "no need for steam tents, oxygen inhalations, unlimited stimulations, dry cupping, and all the rest of the former varied and trying treatment" and case after case in which, with the former treatment, one would have anticipated a fatal termination, "has seemingly, owing to bellaconna, made a rapid and complete recovery."

We are promised a paper giving details and statistics of cases treated with and without belladonna at the end of the present year. It seems to us, however, that it would be difficult to draw a perfectly satisfactory conclusion, if we have to compare the results in a series of cases submitted

to "the former varied and trying treatment" with those in a series submitted only to treatment with belladonna. It would be useful to have a further series in which neither belladonna nor "the former varied and trying treatment" had been employed.

Dr. Coutts states that a very few doses of belladonna in most cases relieved the dyspnœa, that the temperature in many cases fell to normal very soon after the treatment was commenced, that the duration of the disease was much shortened, and that the mortality was greatly reduced. Such results are extremely gratifying, and we sincerely hope that they will be confirmed by further experience.

Professor Comby, of the Trousseau Hospital, draws attention to the benignant course usually run by idiopathic pneumonia in children, contrasting most favourably with the gravity of broncho-pneumonia (*Med. Press and Circ.*, Feb. 15th, 1899). We thoroughly endorse what the Professor says about simplicity of treatment. Fresh air, cleanliness, hygiene of the mouth and nostrils are of primary importance. Blistering should be avoided, but poultices, etc, are valuable. An occasional purgative is advisable. If the fever runs high, the cold bath (65 to 75 degrees) is usually successful in reducing the temperature, and is well borne.

Although in the great majority of cases the fever in pneumonia takes a fairly uniform course, still, variations cannot be said to be at all uncommon. Wunderlich asserted that sudden brusque elevations of temperature and intercurrent remissions are more common in pneumonia than in any other malady. Dr. Alfred Japha has contributed an interesting paper on unusual course of the fever in genuine pneumonia (*Deutsch. Arch. f. klin. Med.*, Band lxii., Hft. 1 and 2, Dec., 1898), in which he reports and discusses a number of atypical cases. These atypical cases are divided by him into three classes. There is, first, a class in which the temperature curve shows large or small variations. the remissions amounting to from three to nine degrees. In this class, which he calls pneumonia with intermittent or remittent fever, the symptoms of the disease are not affected by the changes of temperature. There is, secondly, a class in in which periods of fever alternate with periods of apyrexia. In this class, which he calls intermittent pneumonia, the severity of the symptoms corresponds with the variations of temperature. This form is only the expression of the wandering of the pneumonia. The third class is that of recurring pneumonia, in which the fever and the symptoms reappear after their subsidence. Dr. Japha does not attempt to give an explanation of the marked remissions in the first-class, but suggests that idiosyncrasy may perhaps account for the peculiar type of fever.

In our review of the diseases of the respiratory system in these columns in April, 1898, reference was made to Woillez's, disease, or acute idiopathic pulmonary congestion, in connection with an article by Dr. G. Carrière on its bacteriology. Dr. Carrière has published further contributions on the subject of this disease (*Rev. de Méd.*, Paris, Oct. and Dec., 1898, and Jan., 1899). We concluded from Dr. Carrière's first article that there was insufficient reason for considering the so-called Woillez's disease to be a separate morbid entity. The later work of the writer only confirms us in this opinion.

He reports sixteen personally observed cases conforming to the usually accepted type of the malady. The symptons and physical signs are not essentially different from those of pneumonia. The invasion is characterised by shivering and pain in the side. The exciting cause is a chill or injury, and symptoms appear usually in from four to seven hours, although this interval may be as short as two or as long as fourteen hours.

The shivering is seldom intense and prolonged as in the case of lobar pneumonia. The pain in the side, on the other hand, is extreme, and is aggravated by movement, cough and respiratory effort. It usually attains its maximum at once, and is often the last of the symptoms to disappear. Dyspnœa is a very constant symptom of the declared disease, but varies considerably in intensity. Both pain and dyspnœa can usually be greatly relieved by local treatment, such as blistering or dry or wet cupping. Cough is less frequent than the two symptoms already mentioned, but when present may be very troublesome, and little amenable to treatment. Expectoration is almost constant, and increases in amount towards the crisis, when it may be considerable. Rarely is it blood-streaked, but it is never vicious or rusty. The fall of temperature always occurs from the fourth to the fifth day.

As regards the physical signs, no special significance is in our opinion to be attached to an increase of the circumference of the affected side, although this was thought by Woillez to be of great importance. Dr. Carrière states that as a rule inspection shows absolutely no difference between the two sides, but an increase on the affected side can be made out by careful measurement. Vocal fremitus is often diminished or normal, and only very exceptionally is increased. There is no dulness properly so-called, but almost always there is diminished resonance. Expiration is often prolonged, while the breath sounds may be feeble, harsh, or blowing. Râles are usually present, and of these the sub-crepitant variety is the most common.

The author had only one fatal case on which to found his discription of the morbid anatomy, and this case was that of an alcoholic, whose illness quickly followed immersion, and ended in death on the fifth day. The lung was acutely congested but not consolidated.

The bacteriology, as we previously stated, shows the association of the disease with the presence of pneumococci, staphylococci or streptococci in the sputum, and in the blood drawn from the affected parts. We conclude that the opinion of leading authorities in this country is the correct one, that Woillez's disease and acute pneumonia are merely different degrees of the same affection.

There are indications that there is a gradual change of opinion as to the expediency of paracentesis in acute idiopathic pleurisy with effusion. A few years back there was a tendency to use the aspirator perhaps too freely and too early. It was argued that the operation could do no harm, and that the removal of pressure on the lung must be good, for the earlier the fluid was removed the less likely was it that the lung would

suffer permanent injury. The pendulum is now swinging in the other direction, and perhaps soon paracentesis will be only very exceptionally resorted to.

In *The Practitioner*, Oct., 1898, we alluded to this subject *à propos* of some remarks of Dr. Talamon. Dr. P. Le Damany (*La Presse Méd.*, Nov. 2nd, 1898), and Dr. J. Mollard (*Lyon Méd.*, April, 1899), take a similar view to Dr. Talamon. Dr. Mollard expresses himself somewhat forcibly on the subject.

Clinical history, morbid anatomy, and bacteriology, he says, all unite to urge us to cast aside *cette brutale intervention* except in cases of urgency. Under the specious appearance of conferring an immediate benefit we not only proceed in direct opposition to the curative efforts of nature, but also cause a real injury by rupturing the new membrane in process of evolution, thereby opening the door to infection of the lung and of the entire organism. The effusion, Dr. Mollard maintains, and we think correctly, becomes absorbed in the great majority of cases without active interference. As long as the effusion is not so large as to embarrass the breathing, it should be left alone. Treatment on general lines will produce the best result in the end.

The discoveries of MM. Arloing and P. Courmont (*Presse Méd.*, June 11th, 1898) that tuberculous effusions are both bactericidal and agglutinating for the tubercle bacillus are of practical interest, and support the view that the natural absorption of the effusion is best for the patient. Dr. Le Damany is of opinion that the effusion promotes the cure of the tuberculous pleurisy by immobilising the thoraco-pulmonary articulation. He considers paracentesis as a measure of necessity only when called for by dyspnœa.

When fluid is present in the pleural cavity, it is quite exceptional to find friction on auscultation. Dr. Schüle, of Freiburg, reports two cases in which he observed the co-existence of pleural friction with pleural effusion (*Münch. med. Wochenschr*, Dec. 20th, 1898). Dr. Schüle thinks that the occurrence of friction in these cases depended on the presence of slight and limited adhesions, so that in spite of the fluid the two layers of pleura were not separated. The conclusion drawn by the author is that an exploratory puncture should be made, if otherwise advisable, when there are the signs of fluid, notwithstanding the existence of friction. We might point out that if an exploratory puncture is made in such a case, care should be taken to exclude hydatid of lung.

The significance of fever following operations for pyothorax may sometimes prove very perplexing both to the surgeon and to the physician who is called in on account of this complication. Dr. Augustus Caillé (*Arch. Pediat.*, New York, Aug., 1898), from a study of 300 cases, concludes that a completely afebrile course after operation is the exception. Fever may be the result of imperfect drainage, from obstruction by exuberant granulations or other cause. Intoxication with iodoform or carbolic acid, retention of urine, constipation, secondary and extrathoracic abscesses, and the onset of one of the specific fevers, are among

the causes of elevation of temperature, of which Dr. Caillé gives illustrations. An important class of case is that in which there is but a slight remission of fever after operation, and where we may have an extension of the inflammatory process to the other side of the chest, or to the pericardium, or peritoneum, or concomitant lobar, lobular, or tuberculous pneumonia. It is very difficult to distinguish broncho-pneumonia from a general pulmonary tuberculosis. The latter may be suspected from the high range of temperature, rapid breathing, diarrhœa, and loss of weight. The average fever curve is higher, and the variations of temperature are much greater in tuberculous pyothorax than in pyothorax with unresolved pneumonia. A very important class is that in which, after operation, thorough drainage, and no appreciable complications, the irregular septic temperature persists, resulting from deep-seated multilocular accumulation of pus or abscesses not reached by the primary operation. Finally, Dr. Caillé draws attention to certain cases which do quite well for two or three weeks after operation and then show an irregular rise of temperature. The discharge has almost ceased, and careful examination can discover no cause for the rise. In such cases if the drainage tube be removed and the patient be taken out of doors in spite of the fever a rapid and satisfactory improvement sets in

A form of bronchitis which is associated with Bright's disease is not uncommonly met with in practice. The diagnosis in such cases occasionally presents difficulties some of which are considered by E. Hirtz and P. Merklen in a paper on the clinical diagnosis of certain forms of albuminuric bronchitis from pulmonary tuberculosis (*La Presse Méd.*, Dec. 28th, 1898). There are two forms of albuminuric bronchitis which are likely to lead to the erroneous diagnosis of pulmonary tubercle. The first is that in which there is a localised pulmonary œdema affecting the upper parts of the lungs. Over the affected area there are to be heard abundant fine crepitant râles, but there are none of the signs of consolidation. The usual symptoms of pulmonary tubercle are absent. There is little cough, and the expectoration is either absent or scanty and viscid, while a characteristic type of dyspnœa is usually present. The dyspnœa is out of proportion to the extent of lung affected as revealed by physical signs. It is paroxysmal, and comes on in attacks which are generally independent of the patient's movements, and usually occur at night, compelling him to sit up in bed. The way in which, moreover, the malady comes and goes, and one part of the lung gets well and another gets affected, is another point in which it differs entirely from pulmonary tubercle. The second form, which closely resembles ordinary bronchitis, is constituted by the existence of scattered râles, which at first are crepitant but soon become moist. The expectoration is frothy, mucous, or mucopurulent, very different from the thick and yellow sputa of tuberculosis. As in the case in the first from, there are no signs of pulmonary induration. What has been said about the character of the dyspnœa and the course of the illness applies to the second form as well as to the first. In any doubtful cases careful examinations of the sputa for bacilli should be carried out.

Some extremely good and careful work has been carried out by E. L. Trudeau and E. R. Baldwin, of Saranac Lake, New York, on the preparation and effects of antitoxins for tuberculosis (*Amer. Journ. Med. Sci.*, Philadelphia, Dec., 1898, and Jan., 1899). Their investigations have extended over a period of four years, and have included experiments on four sheep, three asses, twelve fowls, eighteen rabbits and four hundred and fifty guinea-pigs. The animals were inoculated with non-virulent and virulent tubercle bacilli, or injected with killed cultures or with tuberculin. In the majority of cases the serum obtained from these animals was found wanting in any germicidal antitoxic or curative effect whatever. In the case of an ass, inoculated with virulent tubercle bacilli and treated with tuberculin, the serum, although possessed of neither germicidal nor curative action, showed possibly some antitoxic effect.

The serum of rabbits which recovered after inoculation with non-virulent and virulent tubercle bacilli possibly conferred some protection in tuberculin poisoning, and possibly prolonged lives of treated guinea-pigs. Tests on five or six serums from other sources showed that only one possessed antitoxic power. This was obtained from a horse inoculated with non-virulent cultures. The authors point out that the apparent protection against fatal tuberculin poisoning occasionally seen was not necessarily due to the specific antitoxic power of the serums, as similar effects sometimes follow from physiological salt solution. None of the serums appeared to prevent local or general reaction from small doses of tuberculin, nor to influence the temperature of tuberculous animals. Disappointing as the results are, the writers consider that the outlook for an efficient tuberculosis antitoxin is by no means a hopeless one.

The results obtained by Drs. C. T. Williams and Herbert Horrocks by treatment with serum obtained from a horse which had been injected with increasing doses of tuberculin until it ceased to react, were recently reported to the Royal Medical and Chirurgical Society (Mar 28th, 1899). The serum withdrawn within a few weeks after the last injection of tuberculin produced effects closely resembling those of Koch's tuberculin. The serum taken after the longer interval of ten weeks was better borne. Four patients treated with it, in doses of 1 to 5 c.cm., improved, gaining in weight and increasing in strength and vigour. The authors conclude that such serum may be useful in early cases of pulmonary tuberculosis, or where the lesion is limited On theoretical grounds it seems probable that better results would be obtained by using the new tuberculin for the purpose of injecting the horse, but the results of treatment by such serum published by Dr. W. Freudenthal (*Med. News*, New York, Feb. 18th, 1899, and *Canad. Journ.*, April, 1899) are even less encouraging than those of the Brompton physicians.

Prof. Landouzy (Congr. de la Tuberc., 1898; *Méd. Mod.*, Aug. 3rd, 1898, and *Rev. de la Thérap.*, Aug. 15th, 1898) rightly points out that we must not demand from serumtherapy what it cannot possibly perform. No serum can both counteract and check the bacillary infection and at the same time repair and cure the damage already done locally by the tuberculous process. In the tuberculous infection, as in the diphtheritic, the

first essential of success by serum treatment is its use early in the disease. Even with an ideal serum the cure of tuberculosis will always continue to be a slow and trying process for the patient, and a difficult undertaking for the doctor. Tuberculosis can never be so easily curable as it is preventable.

From every point of view, it is of the highest importance to be able to make a diagnosis of pulmonary tubercle at an early stage of the disease. The careful and systematic examination of the sputum has proved of immense value in this relation, but this mode of examination is sometimes impossible. A summary of some recent theses and of other contributions on this subject in the *Journal de Méd. et de Chir.* (Nov. 10th, 1898) shows that there is a danger of dwelling too much on what is, after all, of very minor importance. We do not think the practical physician can attach much significance to the fact of the pulse remaining at the same rate whether the patient is in the upright or the recumbent posture. Nor are we of opinion that the physician, unless he has had a large experience of the method of auscultatory percussion, would be helped by employing it. The use of injections of tuberculin or of artificial serum for diagnosis may be mentioned, but the first is hardly ever employed in man, and the use of the second is still in the experimental stage. The internal administration of iodide of potassium is said to produce effects similar to those of tuberculin in increasing cough and expectoration, and in producing râles in the lungs where none were to be detected before. It is evidently undesirable to produce such effects, even if we can place dependence on their production as evidence of tuberculosis. The agglutinative action of tuberculous serum on homogeneous cultures may prove itself useful by-and-by, but at present few can avail themselves of such a method of diagnosis.

Dr. Frederick Knight refers to common errors of general practitioners in dealing with cases of pulmonary tuberculosis (*Boston Med. and Surg. Journ.*, Nov. 17th, 1898). These are (1) failure to make an early diagnosis; (2) failure to admit the gravity of the situation the moment it is discovered; (3) adoption of treatment which is not only useless but positively injurious, such as the prescription of medicines which destroy the appetite or interfere with the digestion, or giving an unrestricted order to drink whiskey; (4) sending unsuitable cases away from home, or giving vague directions to go abroad without precise indication of where to go to; and (5) sending patients away without proper medical supervision. These errors are, without doubt, made far too frequently in this country as well as in America.

Dr. Vincent T. Bowditch (*Boston Med. and Surg. Journ.*, Nov. 17th, 1898) remarks, as is very true, that in his search for physical signs the practitioner sometimes seems to overlook the most important symptoms—namely, the quality of the pulse, the temperature, and the condition of the digestive organs. A weak, rapid pulse, more or less elevated temperature, dyspnœa, and poor condition of stomach, with a lack of definite physical signs in the chest, often means disseminated tuberculous disease with a decidedly grave prognosis. Such symptoms are usually entirely inconsistent with a truly incipient form of pulmonary disease.

In the treatment of tuberculosis, guaiacetin is perhaps one of the least known among the various derivatives of guaiacol, although not the least useful. Like guaiacol carbonate, it is a white crystalline powder. It has a faint odour and taste of creosote, and leaves a slight bitter after-taste. It is given in doses of four to eight grains, near the beginning of a meal, three or four times a day, and may be taken simply as a powder or in a cachet and washed down with water Dr. A. Bass speaks highly of it from his own personal observations (*Prag. med. Wochenschrift*, Dec. 22nd, 1898) in phthisis and chronic bronchitis. Its effects resemble those of creosote and guaiacol. It stimulates the appetite, improves the nutrition, and diminishes the catarrhal secretion. Dr. Bass says he must not expect much from it, however, in advanced cases or in very active cases of the florid type.

Hæmoptysis sometimes proves a very troublesome and refractory complication of pulmonary tuberculosis. Drugs, though largely used, probably play only a minor part in stopping the bleeding or in preventing its recurrence. Dr. P. Gallot recommends the use of hypodermic injections of iodoform in recurrent hæmoptysis in the early stage of tuberculosis (*Gaz. Méd. de Paris*, Aug. 6th, 1898). The formula he employs is:—Liquid vaseline 0 gr. ·25, Eucalyptol 5 ga., Iodoform 0 gr. 75. Of this 0 gr. ·05 is injected daily. It may be observed that the dose is a very small one, and we very much doubt whether the successful issue in Dr. Gallot's case had anything at all to do with the iodoform injections.

The importance of systematic physical exercise in the prevention and cure of pulmonary tuberculosis has frequently been insisted on. Otis, Butler and Weaver have strongly advocated what may be called pulmonary gymnastics. Dr. Fletcher Ingals has recently addressed the American Climatological Association on the same subject (*Therap. Gaz.*, Detroit, November 15th, 1898). He says it is surprising to find how superficially many persons breathe, and he considers it is of primary importance to teach patients to breathe deeply, Expansion of the air-cells not only empties them of the noxious principles that, if left to themselves, might set up a serious disease, but also equalizes the pulmonary circulation and removes localised anæmia. The long, narrow, flat-chested individual is most likely to contract consumption, and is least likely to recover from it. Dr. Ingals advises that the patient should be shown how to take a deep breath. After a deep inspiration he should hold the breath for a few seconds, and then blow out slowly and forcibly through a small opening between the lips. By systematic physical training the form of the chest can be greatly improved. Dr. Ingals also believes that when tuberculosis has become established in the lungs it is possible to check the process and promote recovery by physical development. Nearly all forms of exercise that take the person out of doors, such as horseback riding, tennis, golf, bicycling, etc., seem well suited to the improvement of the general health, but the most beneficial for the development of the chest are the use of Indian clubs and small dumb-bells, the horizontal bar, the trapeze and boxing. In all of these the patient of necessity learns to breathe deeply, and acquires strength of the respiratory muscles. In addition to

these forms of exercise the patient should practise frequent deep inspiration and forcible expiration several times daily. In order to secure regularity in this exercise, Dr. Ingals recommends some kind of inhaler that may be carried in the pocket and used at stated intervals during the day. Medication may be employed, particularly for its influence in securing regular use of the inhaler. The inhaler consists of a simple hard rubber tube, about four inches in length and half an inch in diameter, filled throughout its middle two-fourths with corrugated blotting paper, and having corks for each end so that it may be closed to carry in the pocket. The medicament is dropped on the blotting paper and the patient is directed to take long deep breaths through the inhaler every two hours. When the inhaler is freshly charged the patient inhales twice, two hours later four times, two hours afterwards six times, and at the end of the next two hours eight times. The medicaments which Dr. Ingals employs are alcoholic solutions of thymol, menthol, tincture of iodine and formalin. Chloroform may be added for the relief of cough. The inhaler is charged with from five to fifteen minims of the solution. The strengths used are: thymol one to two grains, menthol thirty to sixty grains, formalin thirty to sixty minims and tincture of iodine two to four drachms to the ounce of alcohol (ninety per cent.). Dr. Ingals does not believe that these or any other inhalants have any direct effect on the tubercle bacilli, although they may mitigate the catarrhal inflammation of the mucous membrane. The chief value of this mode of treatment results from the deep respiration and consequent distension of the air vesicles.

It has hitherto been a matter of great difficulty to estimate what benefit was really obtained by means of inhalations of the vapors of essential oils and other volatile substances. It is clearly of some importance to know whether these vapors are capable of influencing the growth of the bacillus in artificial media as well as in the animal body. Dr. William Murrell (*Brit Med. Journ.*, Jan. 28th, 1899) records some very carefully conducted experiments on the effects of the vapors of oil of cinnamon and of oil of peppermint on the growth of cultures in suitable media. Neither of these oils appeared to have the slightest deleterious influence on the growth of the tubercle bacillus. These lavatory experiments confirmed Dr. Murrell's clinical observations that the inhalations of these vapors had no beneficial effect in patients in various stages of pulmonary phthisis.

While, however, the vapours of the essential oils proved to be inert, Dr. Murrell found that the vapour of formic aldehyde not only had a marked retarding and inhibitive influence on the growth of tubercle bacilli inoculated on to favorable culture media, and when allowed to act for forty-eight hours entirely prevented the growth and future development of the bacilli, but also proved very beneficial in the treatment of patients. A six per cent. solution was, as a rule, employed, a stronger or weaker solution being used according to the idiosyncrasy of the patient. In most cases the vapor was inhaled once or twice a day, compressed air, by a simple mechanical arrangement, being made to bubble through the

solution. In other cases a kind of "bib" was devised on which the solution was sprinkled, and this was suspended from the neck so that the patient constantly inhaled air impregnated with the vapor. As was to be expected, the drug in many cases caused irritation at the back of the throat, and sometimes induced violent paroxysms of cough. In spite of these drawbacks, twelve out of fourteen patients were much benefited.

In connection with Dr. Murrell's researches, the observations of J. Héricourt and Charles Richet (*Soc. de Biol.*, Nov. 18th, 1898) on the effect of turpentine inhalations in experimental tuberculosis are of special interest. They inoculated a number of dogs with cultures of human tuberculosis. While out of two hundred dogs inoculated and left untreated during a period of ten years, no animal lived longer than six months, out of three dogs submitted to turpentine inhalations two were alive and healthy two hundred and fifty-one days after inoculation.

In connection with Dr. Murrell's experiments we may also refer to some observations of Professor J. Sabrazès, who draws attention to the fallacy of drawing conclusions as to therapeutic action from experiments on the bacillus *in vitro* (*Journ. de Med. de Bordeaux*, Nov. 13th, 1898). A trace of tannin will prevent the multiplication of the bacillus *in vitro*, and render sterile artificial media. But tannin in large doses he shows to be utterly useless in preventing the progress of experimental tuberculosis in susceptible animals. From this we may conclude that it is useless in the treatment of human tuberculosis.—*London Practitioner.*

FOOD IN MOTHERHOOD.

BY EPHRAIM CUTTER, M.D.

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Coffee-making.

The facility with which roasted and finely ground coffee parts with its virtues by displacement in hot water is something wonderful. The process with coffee is more rapid and thorough than the process of a solution of most salts or of almost any botanical specimen tried in pharmacy. The displacement process is largely employed in pharmacy and in leaching bark for tanners' use.

Each drop of water acts like a bucket in a wheat-elevator, only it carries the solubic part *down* in place of *up* the elevator. As each drop becomes saturated, with inconceivable rapidity (if the filter is permeable) it settles by its own weight, and is followed by other drops, which saturate with like celerity, and descends to join the other drops, so that in the space of thirty seconds a good cup of coffee can be had surely every time. The French were the first to use this process for coffee, and they have excelled in the art of extracting a good cup of this drink.

My attention having been directed to the adulteration of food, it has seemed to me that the contact of coffee with metallic receptacles is objectionable on account of the chemical products made by the coffee with the iron, lead, tin, etc., of the receptacle. Specially has this objection been enforced by an examination of old metallic coffee-pots that leaked, from the solution and loss of their substance, particularly at the soldered joints, which make galvanic batteries when excited by the coffee solution. Perhaps this is being over-nice, but when cotton cloth or non-metallic receptacles for making coffee are cheaper than metallic ones, there seems to be no reason why they should not be preferred, and thus avoid the risks of drinking up one's coffee-pot in time. It is coffee, not salts of tin, iron, lead, etc., that is wanted. Not knowing of such earthen coffee-pots, the writer set about inventing one, and had about developed it, when shown the "Webster" coffee-pot. This seems to be quite the desired device. Troubles come fast enough; but there is no use inviting them to come in our coffe, when it is cheaper and more satisfactory and time-saving to dispense with them at the outset by using the combination of earthenware and cotton. This may seem a small matter, but it is not when one considers how few people make good coffee by the conventional methods in use, and how important this matter of food is to the welfare of the race. A cup of good coffee in the morning (without sugar) makes the heart glow with strength, and is of itself a good beginning of any day. Poor coffee is inexcusable now that it is necessary only to have

good coffee grains roasted end very finely ground, by being run once or twice through the mill, put into the coffee-filter of this device, and hot water poured over them. The coffee is then ready to use Of course care should be taken to have the filter cleaned and dried after use, and new ones substituted from time to time. The coffee is made on the breakfast-table at the time of using To physicians and those exposed to the action of the weather such a device is a boon, as it is easy to manage and so sure of its action. The directions of Count Ruford given for coffee-making (*see his Essay*) about one hundred years ago, are as fresh and crisp as if written yesterday. It seems as if this subject was deemed by him a matter of importance.

Besides, he taught the preference of earthenware coffee-pots. Had he only put a muslin bag in place of a perforated china, we would not boast of any advance on him for the past hundred years.

Tea and Coffee: Insomnia.

A prominent Methodist clergyman of Philadelphia said the other day to one of my patients that he was much troubled with insomnia, but when he left off the use of tea and coffee and used hot water instead, he slept beautifully. I have noticed in my own case the same thing to a less degree. For example, when away from home. if I get very tired and drink tea or coffee at suppes, insomnia follows. When I drink hot water or milk I will sleep. I, therefore, recommend my patients in insomnia to try to do likewise as it is the influence of daily causes long repeated which effects health.

Air is Food.

On the ground that everything is food which is needed to sustain life, and which when taken into the system becomes an integral part or element of that system, it is easy to see that air must be food. Air is made up especially of two gases, oxygen and nitrogen. These elements belong to the human body, and are furnished in what we eat and drink, besides air. By some, probably, the position taken here will be denied. This is not the place to argue at length on mooted points, nor for controversy, but it may be said that those who do not believe and do not agree have only to stop breathing for five minutes. The result would be starvation and death, thus proving that air is essential to sustain life, which is the first part of our definition of food. Chemical analysis shows the presence of oxygen and nitrogen in the tissues, solids and liquids of the body, and thus the second part of our definition is met. It would be interesting to argue for a more active position of nitrogen in the atmosphere than has been assigned to it by science, but I must be content with merely a prophecy that the time is not far distant when this will be the case. It is not reasonable that so much nitrogen is merely of negative uses. That air is food is an ancient idea.

A few years since I was going from Boston to New York by the Stomington line. At my side in the main saloon sat a gentleman who had on his knees an open volume in Arabic, as it appeared to me. I

found he was a Methodist missionary from India, returning from France, where he had been to consult about the best mode of manufacturing ramie fibre. I also found that he could converse in twelve languages. I said, "You seem to be taking refreshment in several languages," and I asked him if that book in his lap was Arabic. He said no, but its language was derived from the same root, and was Hindustani. I then asked him if he thought the English language would ever be the universal language. He replied, "No; it is not expressive enough. For example, we say in English, 'A dog walks out, and a man walks out,' but the Hindustani says, 'A dog walks out, and a man goes forth eating air.' Furthermore, I find this phrase is 3,000 years old.

If this is so, and I see no reason to doubt it, the idea of *air* being food is an ancient one, and older than the Christian era. Bad air or "malaria," is a common expression among us. To get good air the ancient custom of visiting the seashore and the mountains in summer has been revived with great benefit to the human race in more ways than one.

Ventilation receives great attention, and should have more, as air gets foul from human use in respiration; in combustion from fires of all kinds; in dust; in smoke; in the ascent of cryptogamic plants in the atmosphere; in sewer-gas, and in sewer fermentations; in volcanic eruptions; and in all operations which made particles of any kind that float in the air.

It is probable that air is rendered impure by exhalations from organic animal substances decaying in connection with vegetable substances. Hence, air is purer away from the habitations of men and animals—*i. e.*, on the sea, in deserts, and wildernesses.

Potatoes.

In this paper it is not intended to give an exhaustive statement of this subject, as the potato is an underground stem that contains a compendium of all the structures that enter into plant histology, but to make brief allusions to some of the points in which the microscope is an instrument of precision in relation to the effect of cooking upon potatoes.

The idea that a microscope has any place in a kitchen meets with some ridicule from those who have not looked into the subject and who forget that esthetics govern the subject of food so that thousands are destroyed by bad food simply because it is pleasant to the taste and "good to the eyes."

Following out this line of conventional thought, if by the use of the microscope it is shown that there are real esthetic beauties in the things ordinarily thought to be divested of any beauty, as the potato, one thing will be accomplished.

Say what we may, there are queens in our kitchen who govern the whole house. The food prepared by them form the staple of our lives. If we have poor food, we are not well; if we have good food properly cooked, then our lives run smoothly and in health. The evils in strong drink are great, but the evils of bad cooking and ill-selected food are

greater. It is one of the curious things of our ethics that the really most important matters of our households are too often entrusted to the lowest intelligences we meet with in society; that when we hire cooks we trust our lives and health to persons who can neither read nor write, in many cases, and who do not have any clear idea of what they are about, save to get all they can, break the crockery, and dress in what finery they can on a Sunday.

Would that the time spent by the queens of our parlors on crazy quilts, screens, and fancy needle-work (well enough in their place) was given with the beautiful problems connected with food that are so vitally important and constantly pressing on our attention every time we eat.

Morphology of the Potato—Uncooked.

By potatoes we mean, firstly, the tubers of the *Solanum tuberasum*, the commonly called Irish or white potato, a native of South America; and, secondly, the sweet potato, a native of Malaga Peninsular, *Botatas edulis*, or the *Convolvulus batatus* of Linnæus.

We take, firstly, a tuber which has a covering (good enough to be patented) of an epidermis, made up of cork cells, which are elastic, protective, and capable of reproduction to a certain extent when mutilated or destroyed. This skin is made up of layers superimposed in oblong right-angled cells, much like common brick-work, and unlike the cork-cells of the common bottle-cork (*Quercus suber*). In form the potato skin is an admirable covering and perfectly adapted to its use. At various points are the so-called eyes, each of which is connected by gubernaculum lines of spiral tissue connecting with the central part of the stem (Reinsch).

A thin section of the potato discloses a beautiful net-work of connective fibrous tissue, looking much like the meshes of a common fish-net. This network is filled with starch-grains in all stages of development, from the most minute granules to the large concentrically marked pear-shaped grains. Under polarized light these sections of raw potatoes form some of the most beautiful objects witnessed under the microscope, comparing favorably with an Italian sunset or rainbow. That such a lovely object can be found in the homely domains of the kitchen is ignored by the queens both of the parlor and kitchen.

But it is none the less an argument in favor of the microscope, which transmits ideas of the real character of things which have no reputation for their really esthetical character, like potatoes that grow in the ground, smothered in manure.

White Potatoes—Cooked.

Whether cooked by steam, boiling water, or the heat of frying fat, a wonderful change in the morphology of the raw potato is effected, more or less complete, according to the time and thoroughness of the process. When thoroughly done, the parts that looked like the interspaces of a net-work filled with distinct and separate starch grains of various shapes

and sizes as aforesaid now appear in new phases, as sacs or obovoid bundles, distinct, free, and differing in shape according to the demands of the spherical geometry that obtains in the building up of the tuber.

The inside of the sacs are filled with the starch grains. It seems as if the outside wall of the sacs was made up of the celulose fibers, which, before the action of the heat, formed the network aforesaid. How it is that the fibers, and strings of this net-work are turned by the heat into a complete sac is hard to understand, because there seems to be a running of separate fibers from one space to others.

Still the fact remains; the sacs seem to come out as smooth and complete as the shell of an egg, only that the sac wall is clear as glass and polarizes light.

If the cooking process is not complete, the following facts are noted under the microscope:

1. The starch grains are distinct, and have interspaces between them.

2. They polarize light.

If the cooking is complete, the following facts are noticed:

1. The starch grains are broken up into one homogeneous, well-mixed mass

2. They do not polarize light.

In proportion to the presence or absence of polarization of light, and in proportion as the starch grains are broken up more or less, is *morphologically the perfection of the cooking.*

3. Another effect of cooking is, when the heat is as high as in frying or boiling, to contract the starch grains into a semi-solid anfractuous, protoplasmic mass, leaving between the sac wall and itself clean margins of empty space, or filled with clear, translucent, protoplasmic matter, which does not polarize light. The starch grains are ruptured and fused into one mass, and yet a little different from the same when baked or boiled.

So that in this way the microscope becomes a testing medium for cooking potatoes of the finest description. It supplements, or should not be divorced from, other tests, as the chemical, by showing the presence of glucose or dextrine, or the tests by touch of tongue, teeth, finger, fork or skewer, as to softness.

Another test of cooking potatoes is the morphology of the feces of the eater. It is surprising to see how many of the potato sacs run the gauntlet of digestion because not thoroughly cooked. To be sure they are not so tough as the sacs of baked beans, which are found to be very much more indigestible by the morphology of the feces; still, so long as mankind have to eat to live, and so long as cooking can properly prepare food so that it will be digestible, it seems folly for mankind to overlook the tests of good cooking.

To give the intestines alimentary problems to solve, which should be solved by cooking, is putting man between two millstones, one of which

may represent the inevitable battles of life without the body, and the other the needless intestinal wars within, the latter uselessly handicapping from the outset.

In my opinion the best method of cooking potatoes is either by steaming or baking.

As to the sweet potato. It is interesting to note the difference between the raw and the cooked. There is the same reticulation in the raw and the same formation in the cooked as found in the white potato, whose stems are clustered stalks, while the sweet potato is a climbing vine.

Oatmeal.

This article has attained a popular position as a food in competition with wheat, barley, and corn, or maize. It has its reputation from its use by the Scotch. All the vigor and energy of their nature being attributed to the use of the oatmeal. It is sold at a high price, as it has to be prepared by baking in kilns and mounted with care.

It is given to babes and children, and highly liked. The truth is, as compared with wheat, oat is a very poor food. And if the Scotch thrive on it, it is *in spite of it, not on account of it.*

Oat cannot be made into light, spongy bread, as it has not gluten enough. It contains more silica than wheat. It is harder to digest.

I have had lately a case where a nervous boy of ten was paralyzed in the lower limbs, so that he could not walk. Cured by stopping oatmeal and dieting on beef.

Oats are good for horses and bovines. Man had better leave oats to the horses. It is good economy for the purse, for the constitution, for the alimentary canal to prefer wheat to oat. Wheat is a royal grain, and has stood the test as a supreme, royal food for man for ages.

Whole Wheat Cleaned.

In August, 1884, I was at my brother-in-law's gristmill, and noticed the Michigan winter wheat as it came through the smutmill clean and fair, ready to be ground up into "Arlington" (Mass.) "wheat meal." The idea struck me. Why not use this cleaned wheat for food? It is free from dirt, and contains all the form and chemical elements in proper proportions for nourishment that our Creator intended mankind should have when wheat is eaten. We do not crack or grind up other fruits, as tomatoes, bananas, potatoes, etc., a long time before they are eaten; nor do we deprive them of their natural protective garments, and mechanically separate their form elements, so that one-half at least of the nutritious qualities are taken away and given to animals, as we do in wheat. If the above-named were subjected to such treatment, they would become unfit to eat. Why not, I thought, get the aroma and bouquet of the wheat in the cooking, and not lose it in the milling? Acting on this impulse I took home with me a half-bushel of the cleaned whole-wheat,

and put my family upon it, to see how long they could live on it without tiring, when used like oatmeal, as a breakfast dish. There has been no sickening of it.

Modes of Cooking.

My wife, who is my authority, after many trials of hers and my own (in which I was laughed at) gives the following: "To cook cleaned whole-wheat—an amount sufficient for four adults—take one cupful of wheat, wash it clean in cold water; put it in a tin pail or crockery bowl, or other suitable utensil, and add one half a teaspoonful of salt and three cups of cold water. Then suspend the pail in a closed pot of cold water, set it on a heated stove, and boil for eight or ten hours; or cook for the same time in a double water-jacket boiler (a common glue-pot does well for small quantities; or cook for the same time in a "Chamberlain" or other steam-cooker. When cooked it should be soft, adhesive, glutinous, and easily masticated. Serve with butter, milk, or cream, or eat it without—as the Asiatics eat rice with no seasoning. If the cooking is well done, there is an agreeable nutty flavor of the wheat, which corresponds to the bouquet of grapes. This flavor seems to be lost when the wheat is cracked, crushed, or ground long before cooking. If this flavor is not desired, the cleaned whole-wheat may be pounded in a mortar, or run through a coffee-mill. This well shorten the time of cooking to four hours and less.

Advantages.

This is perfect food, and gives all the body's tissues a chance to be fed and nourished. It is intended that this should take the place of oatmeal, which has less gluten as compared with wheat, and is harder to digest. It is better than flour. Magendie fed dogs on flour exclusively, and they died in forty days, whole other dogs thrived on whole-wheat. Judge Abbott of Boston once told me of some shipwrecked sailors who were obliged to live on flour alone, and they nearly starved. They could have lived on wheat. It is more economical than flour. Hence, when money is scarce and resources have to be husbanded (or "wifed," it may be more truly said), a resort to this food will be very satisfactory. The objection to the tegumentary coats is not so great as some suppose. I have practically tested this point to my satisfaction with my patients. This food is free from yeast, and hence less liable to fermentation in the alimentary canal. The danger of loss of health on this food is much less than on flour and sugar.

Bread.

When flour is mixed with water, and the dough is immediately baked, unleavened bread results. The substance of unleavened bread is more is more solid, less vesiculated and spongy than leavened bread. The vacuoles and anfractuous cavities are many, but they are not so large and evenly diffused as in well-made leavened bread. These unleavened

bread vacuoles are probably due to the expansion of globules of water and air imprisoned in the dough by kneading. When to the mixture of water and flour alcoholic yeast-plants are added and the dough, properly beaten, is placed in a lightly covered receptacle in a warm place over night, by morning the dough will be found increased in bulk, and sometimes overflowing the pan.

Place the ear near the pan, and soft, continous hum will be heard, much like the swarm of bees. This sound is caused by the evolution of carbon dioxide gas, rising by expansions from below, as its specific gravity is greater than that of the atmosphere. It is caught in the viscid, glutinous mass, and expands into bubbles, which burst, thus vesiculating the dough. The accumulation of this gas causes an increase of bulk, which is more apparent than real. The dough is excavated or hollowed into multitudinous anfractuous, irregular, and regular cavities, caves, or areolar spaces, which process nicely solves the problem of getting the largest amount of surface into the smallest amount of space. When the dough is baked, these caverns or vesiculations are surrounded by solid walls, which, under the microscope, if the bread is well raised, present a beautiful picture, which defies description and pencil.

There is no doubt that alcohol is vaporized, and helps the vesiculation. So, then, we trace the following as causes of the rising of bread: (1) Carbon-dioxide gas. (2) Vaporized water or steam. (3) Vaporized alcohol. (4) Air-bubbles expanded by heat.

Besides these physical changes in the dough, the yeast changes the starch into glucose more or less, which process is furthered by the action of the heat in baking. In other words, the bread is made more soluble in the alimentary canal, and the lighter and more spongy it is, the easier to digest.

The change of starch into glucose is the crowning merit of the process of raising bread by yeast. In this respect it has an advantage over the so-called baking powders, which vesiculate by the liberation of the carbon-dioxide gas in the baking, and make the vesiculations just the same as in the yeast process, but there is no change into glucose, only so far as it is done by the heat of baking. For this reason aerated bread, or bread raised by baking powders, is not so good for digestion as yeast-bread properly made.

In the gem-cake process, where unleavened dough is baked rapidly in small masses in very hot ovens, the steam formed makes the vesiculations and sponge.

In sponge cake the eggs are vesiculated beforehand by beating into their viscid substance atmospheric air with a fork or a machine made for the purpose. When this mass is white with air-bubbles it is stirred in the flour and sugar and immediately placed in a hot oven. The expansion of the detained air-bubbles makes the cake rise into an elastic, felty body like a sponge, whence the name is derived.

Crackers are biscuits made of unleavened dough baked hard. The gain in twice baking is found in a more complete change of starch into dextrine, and in destroying the yeast more perfectly when leavened dough is

used, and thus the product does not grow mouldy so readily as the ordinary bread might under the same circumstances of long keeping. Toast is more soluable than bread.

A great many crackers are made by flattening raised dough into thin sheets under iron rollers, thus driving out the alcohol, air and carbon-dioxide gas, and making the substance solid with starch, gluten, glucose and dextrine after baking.

Pastry embraces the compositions made up of unleavened bread, eggs, milk, butter and many other materials, according to the art of the cook. These are to be avoided in motherhood, as taking up too much time in cooking, and as affording difficult and uncomfortable substance for the alimentary canal to digest.

As a matter of fact, bread raised by yeast has been universally used by man from the remotest periods of history. It is the staff of life. Among the cereals that furnish bread, wheat, rye, barley and maize may be termed the princely grains. *Wheat is the king of grains.* When flour is spoken of, wheat flour is meant. When bread is spoken of, wheat bread is meant. The original wheat bread included the six coats of wheat berry, and there is no doubt that man thrives on this bread.

But as society has developed, an ethical demand has arisen that a superior excellence of bread was incompatible with the dark or black color caused by the coats of the wheat, and so they have been discarded to make bread white in color. The standard flour is made from the parenchymatous portion of the berry, but at the expense of the more nutritive elements.

This yielding to the demands of the physiologically uneducated ethical eye has no doubt wrought disaster to the human race.

As to the injurious effects of cake or pastry, the writer thinks them due, not to the want of yeast, or the presence of fat (or shortening) but to the sugar and the impoverished flour. For he has found that cakes made of the entire-wheat flour are more palatable and digest better than the same preparations made of common flour. When it is remembered that sugar in solution put in a warm and moist place—as the alimentary canal—in contact with alcohol-yeast most readily ferments; it is easy to see how cake and pastry easily ferment in the stomach and bowels.

Presence of Alcoholic Yeast in Bread.

Examinations of microscopic fields of a quarter-inch objective and one and a half inch eye-piece, show the presence of from thirteen to one hundred and thirteen alcoholic yeast plants; some of these were automobile and moving laterally. All were surrounded more or less by automobile spores actively moving about.

Temperature of Baking Bread.

This was ascertained by testing a loaf baked so as to have a crust on it, by puncturing with a skewer and a thermometer plunged in. The temperature was uniformly found to be 285 degrees Fahrenheit. Horsford says 500.

Are the Yeast-Plants Destroyed by Baking?

My wife removed the inside of a recently baked gem-cake and stirred it up with water. It was mixed with a cupful and a half of flour; the dough stood in a warm place two days, and rose a little as shown by surface-cracking and vesiculation inside. The bread made from this sample was heavy, soggy, sour and tasted badly. The starch grains were broken, macerated, outlines obliterated much differently from ordinary bread. The rising did not equal that of unfermented bread. Had the cake been dough, considerable fermentation would have been expected. So, in this case, the yeast was evidently destroyed by baking.

The Main Points about Bread Raised by Yeast are:

1. That it should contain all the nourishment that the Creator intended man to get when he ate wheat, rye, barley or maize. If the flour is impoverished the bread is impoverished.

2. It should be properly prepared in all its manifold stages from the field to the table.

3. Specially should it be thoroughly cooked, so that the yeast may not harm the alimentary canal nor the lungs.

4. Bakers, cooks, housewives and others should be instructed as to the folly of sacrificing the solid values of wheat to whiteness and lightness.

5. Whole-wheat bread can be lived on exclusively for forty or forty-five days without disease therefrom becoming marked.

Stale Bread.

The cells of the walls of dough are made up of starch and gluten, with traces of dextrine, glucose and sugar. Also there is vegetable albumen soluble in water and united with the starch and gluten. In baking, the albumen is coagulated, the gluten is dehydrated, the starch grains are swollen, stiffened and many of them burst, glassed and dried into what is glacial starch. Another effect is to make the glassy starch so incorporated with the gluten as to become inseparable by washing after baking.

On drying, the dehydrated gluten immediately absorbs the water from the starch with which it is mixed or incorporated, as roasted alum absorbs water that is sprinkled upon it. The starch thus rendered dry and stiff gives a greater rigidity to the walls of the sponge, and makes its texture more firm and true—and thus we have *stale* bread.

Professor Horsford, in his admirable Report to the United States Government on Vienna Bread at the Vienna Exposition of 1873 (published at Washington, Government Printing Office, p. 96, Art. 212), says: "The solution then of the question of the difference between stale bread and bread freshened by heating or toasting is this—the gluten of the crumb walls of the stale bread which are stiff and brittle is dehydrated by the heat in freshening, and the water of hydration driven out softens the glacial horny starch which coats and penetrates the gluten. Thus softened, the crumb is more palatable, because it is in the condition to be

dissolved in the saliva and tasted. On cooling, the water is withdrawn from the starch, which is thereby rendered stiff, and restored to the gluten, and the bread becomes stale.

Crust of Bread.

(*Loco citato*, p. 93, Art. 204). "The examination of the crust shows that heat has produced a variety of effects of marked character. It has been converted into dextrine. Portions of the dextrine, as well as of the gluten, have been subjected to slight destructive distillation, yielding at the outset, with proper temperature, an agreeable essential oil, the grateful aroma of freshly baked rolls. If continued too long, the destructive distillation produced causes the formation of substances less grateful to the sense of smell, bitter to the taste and worthless for the purposes of nutrition. Among the bodies produced Reichenback recognizes 'Assamar,' a bitter substance, the effects of which on the human organism, according to Von Bibra, are akin to those of coffee."

Crust coffee, then, is not a bad substitute for ordinary coffee, as it contains *assamar;* indeed, it is sometimes a very good substitute for those who cannot bear coffee.

The Size of the Loaf.

It is best not to have it too large, so that it can be thoroughly cooked without being burned on the outside. But the invention of the closed steam baking-pan avoids this difficulty, as the steam prevents the burning, so much so that it is usual for the cook to open windows in the pan to admit air, so that the loaf can be properly browned.

In Horsford's exhaustive treatise the vesiculation of the bread by the steam formed from its contained water seems to be left out of account.

Photographs which I have had taken of leavened and unleavened bread show much less difference between them than one would expect. The vesiculations of the leavened bread are larger, but they are no more numerous than the vesiculations in the bread made by merely mixing water with flour into dough and baking it.—*Dietetic and Hygienic Gazette.*

MEDICAL PROGRESS.

CLOSURE OF THE ABDOMINAL INCISION AFTER LAPAROTOMY AND THE TENDENCY TO HERNIA.

In the course of time, abdominal operators have reached a proficiency in technique and an assurance in the application of the details of asepsis that have made laparotomy a comparatively facile and safe procedure. There has however remained an objection not foreseen at first, but ever becoming more insistently prominent as the number of abdominal operations increased. Despite the most anxious care and most solicitous technique ventral herniae occur at the site of the abdominal incision and often make life miserable for the patient. The frequency of the occurrence of hernia has become one of the great sources of opprobrium to modern abdominal surgery and it is not unusual to have patients who do not fear the result of the operation itself hesitate to undergo it because of the fear of the subsequent hernia that they have learned to dread from the experience of friends or acquaintances.

The review of the recent results of post-operational hernia by Dr. John G. Clark of Johns Hopkins Hospital in the recent number of Progressive Medicine* shows that a number of factors which have usually been considered as influencing the production of hernia really have no aetiological connection with it. For instance permitting the patients to get up after 17-18 days does not predispose to hernia and keeping them in bed for longer periods does not prove a prophylactic against its occurrence. The wearing or failure to wear a bandage after operation does not affect the liability to hernia either favorably or unfavorably. Pregnancy following immediately or remotely after operation plays no part in the production of hernia despite preconceived notions to the contrary.

It is evident then that the occurrence of ventral hernia after operation is mainly due to the method of closing the abdominal wound, despite all that has been said by certain gynecologists abroad as to the advantage to be derived in this matter from making the incision through the rectus muscle. Dr. Clark, from his experience at Johns Hopkins as well as his records of the subject decides in favor of the incision in the linea alba. Two things are necessary to lessen the tendency to hernia in closing the incision. First the fascia, i.e., the aponeurosis of the recti muscles, must be carefully brought together so as to secure complete and firm continuous union along the line of section. The essential point in placing the sutures is to catch enough of the aponeurosis to firmly bring the borders of the fascia not only into complete coaptation but also to slightly

* Progressive Medicine. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Volume II., June, 1899. Lea Brothers & Co., Philadelphia.

elevate them into a medium ridge. The coaptation of the fascia must be especially exact at the lower end of the incision when the liability to hernia is greater because the layers of fascia are fewer.

The second requisite for a firm cicatrix is to secure healing *per primam*, and this is best secured by leaving no dead spaces in which blood or lymph may collect to become infected, and by allowing no penetrating cutaneous stitches through which micro-organisms may penetrate from the surface despite the most careful precautions. On the whole, this subject of the avoidance of hernia by a careful technique in the closure of the abdominal incision would seem to have reached a development that leaves very little to be desired, and it is evident that it is only in patients with especially relaxed tissues or with natural tendencies to hernia that the operator may feel exempt from responsibility in future cases of this annoying sequela.

MATRIMONY.

BY N. E. ARONSTAM, M.D., DETROIT, MICHIGAN.

It is not my aim to consider and analyze the philosophical and social aspects of marriage, but I have attempted to gather the *cons* of unrestricted matrimony from a medical point of view, believing that the latter have an overwhelming importance over the former. War, pestilence and famine have time and time again decimated the ranks of communities, but nonsanitary matrimonial alliances have resulted in much greater disaster.

Why is the present generation so weak, constantly afflicted and affected with a legion of ailments of which physicians were ignorant in the past centuries? Why has many a name been added to the index of nervous diseases, of which the physician did not know anything fifty or one hundred years ago? Some, no doubt, will venture to solve this important question by saying that modern investigation in the anatomy and physiology of the nervous system, and a better knowledge of pathology in general, have opened a new array of facts, which were obscured by a veil of ignorance in the past. Is that a true scientific answer, based upon a thorough understanding? for words, though euphonious and resonantic, are still only words. Are we not aware that aside from the many discoveries made by our modern improvements in the above enumerated branches, new diseases have actually arisen in the course of time, afflictions which we can only attribute to the modes and methods of our present life; or to speak in a more constricted sense, the results of injudicious matrimonial alliances?

Let us trace cases of tuberculosis, both in children and adults, and see how many are acquired and how many are congenital? The percentage of congenital cases is not as low as has been supposed heretofore. Although denied by many, we cannot absolutely ignore the supposition of congenital tuberculosis. Then again, are we absolutely sure that all these nervous disorders to which the present generation is so prone; all these hysterias, neurasthenias, conditions of nervousness, nervous prostrations, etcetera, are not due to an indulgence in Bacchо from the parental side? Again, are we certain that the legion of cutaneous diseases in both sexes and at different periods of life is not actually the result of a luetic tendency transmitted by the parents? In short, I venture to say that if we should look into the matter very closely we would be able to find that the majority of diseases are simply the result of an unhealthy propagation of species, in which the tendency toward the various morbid conditions has been transmitted.

The state protects the property of her citizens, retards nonmoral invasions, prevents the ingression of the latter in the community, spends millions of money for educational purposes, maintains health boards for the sanitary and hygienic welfare of the people, but does not protect the

innocent offspring from wrongs committed by the parental side. The term "wrongs" is rather too mild; "crime" would be the appropriate word. No occasion would be offered to the state to protect the property of her citizens; but few tendencies would exist in the community; the state would not be required to spend so much energy and money if she would take under her wings, in her absolute power, the great aim of ages and human kind, namely, to produce a healthy race, a stainless generation. And she can accomplish this if she desires. Let her take the entire question of matrimony, in its total aspect, under her control. Let the state look upon marriage just the same as upon the militia, in which it is required that the individual who enters the army shall be capable of performing the duties and burdens necessary for a member of such body. Two individuals, the one male, the other female, enter the military school of life with prospects of a battle, however slight and insignificant it may be; and considering the propagation of the race, which is the highest and ultimate aim of this alliance, it would seem that these individuals ought to be fully capable of enduring the struggles and sufferings of that battle, which we call life; and not only that, but they should be in such a state of health as will enable them to propagate a healthy and stainless race.

What, then, is the remedy? How would you prevent youth from overflowing? How would you forbid voluntary matrimonial relations to take place? How would you ameliorate the present evil, with due respect to the passions of youth? I will partly answer with OSLER, who admirably treats a part of this subject in his article on "Syphilis" in his excellent "Text-book on the Practice of Medicine." "Two measures are available," he says, "the one personal, the other administrative. Personal purity is the prophylaxis which we as physicians are especially bound to advocate. Continence may be a hard condition (to some harder than to others), but it can be borne, and it is our duty to urge this lesson upon young and old, who seek our advice in matters sexual. Certainly it is better, as SAINT PAUL says, to marry than to burn, but if the former is not feasible, there are other altars than those of Venus upon which a young man may light fires. He may practice at least two of the five means by which, as the physician ROUDIBILUS counselled PANURGE, carnal conspiscence may be cooled and quelled—hard work of body and hard work of mind. Idleness is the mother of leechery; and a young man will find that absorption in any pursuit will do much to cool passion, which, though natural and proper, cannot in the exigencies of our civilization always obtain natural and proper gratification. The second measure is rigid and systematic regulation of prostitution. The state accepts the responsibility of guarding citizens against small-pox and cholera, but in dealing with syphilis the problem has been too complex, and has hitherto baffled solution. On the one hand inspection, segregation and regulation are difficult, if not impossible to carry out; on the other hand public sentiment, in Anglo-Saxon communities at least, is as yet bitterly opposed to this plan, while this feeling, though unreasonable, as I think, is entitled to consideration, and choice lies between two evils—licensing, even imperfectly carried out, or widespread disease and misery. If the offender bore the

cross alone, I would say forbear; but the physician behind the scenes knows that in countless instances, syphilis has wrought havoc among innocent mothers and helpless infants, often entailing lifelong suffering. It is for them he advocates protective measures."

To recapitulate: Three measures are available, of which two were mentioned—personal purity and regulation of prostitution; the third, the most important of all, as I think, is the full and absolute power of the state in affairs matrimonial. Let each and every individual, who wishes to enter the "Temple of Hymen," be it male or female, undergo a rigid physical examination. Permanent questions should be established with regard to a possible existence of a family history of lues and tuberculosis. The nervous system should be thoroughly tested. The mental conditions of the individual should be subjected to a trial. A scrupulous examination of the genital organs in particular should be instituted, as well as of the thoracic organs. If a person furnishes negative results, as regards the prescribed standard of the above requirements, he or she should be rejected from the matrimonial eligibles, either permanently or temporarily, according as the case shows itself amenable to treatment.—*The Physician and Surgeon.*

URTICARIA.

SYMPTOMS.—Stelwagon has seen only three cases of urticaria pigmentosa in an experience of twenty years. The beginning lesions were, for the most part, at least, wholly urticarial in their earliest stages; many behaved as such and disappeared, in others there seemed to be some mild hæmorrhagic deposit with a tendency to more or less permanent cell-infiltration. The eruption was most abundant on the neck and trunk. The disease began in very early life. The disease is, in the beginning, essentially an urticaria, and the subsequent peculiarities are due to some secondary changes in the lesions.

W. Freudenthal notes a case of that rare disease, urticaria of the larynx. The man, who was fifty-nine years old, suffered from attacks of urticaria of the skin. The lingual tonsil was somewhat enlarged, and there was a diffuse redness of the laryngeal epiglottis, with a slightly œdematous elevation on its right side. Later herpetiform prominences were occasionally noticed. This condition of the larynx was attended with an itching sensation and lasted only during the attacks of cutaneous urticaria.

J. M. Taylor has seen pharyngeal urticaria in a young lady, in whom sudden severe dyspnœa occurred while attempting to sing. In about ten minutes the eruption of urticarial wheals were noticed on the skin. A spray of anti-pyrine and cocaine to the throat gave immediate relief.

ETIOLOGY.—Créquy thinks that the mind is influential in producing urticaria. He has seen one patient who has urticaria every time he sees strawberries, and a friend of his gets an attack of urticaria every time he hears the word.

TREATMENT.—Bulkley gives the following prescription for urticaria:—

℞ Chloralis,
Camphoræ, of each, 1 drachm.
Pulv. amyli, 1 to 2 ounces.

M. Sig.: Keep tightly corked in a wide-mouthed bottle. Rub in with the hand.

Gaucher prescribes the following as an application in urticaria:—

℞ Alcohol,
Chloroform,
Sulphuric ether, of each, 3 parts.
Menthol, 1 part.

M. Sig.: To be applied in the form of a spray.

B. Wolff relieves the most acute symptoms of urticaria within a few hours, and effects a cure within twenty-four hours by giving sodium phosphate in doses of four to five grammes every three hours, in concentrated solution.

The following solution may be used topically:—

℞ Prepared calamin, 45 grains.
Zinc oxide, 45 grains.
Carbolic acid, 15 grains.
Lime water, 1 ounce.
Rose water, 2 ounces.

BOOK REVIEW.

The Treatment of Pelvic Inflammation through the Vagina.

By Wm. R. Pryor, M.D., Professor of Gynecology, New York Polyclinic, etc., etc., with 110 illustrations. Philadelphia: W. B. Saunders; Toronto: Carveth & Co., pp. 240. $2.00. 1899.

This book is an elaboration of Dr. Pryor's lectures and demonstrations in the New York Polyclinic. It may claim the distinction of being very definite as to the best methods of treatment, which from a man of Dr. Pryor's experience, should by very valuable. For in the multitude of counsel of the present day the ordinary practitioner is very likely to get befogged.

An Epitome of the History of Medicine.

By Roswell Park, A.M., M.D. Second edition. Illustrated with portraits and other engravings. Philadelphia: The F. A. Davis Company, 1899.

That a second edition of a work of this character should be called for within a year after the appearance of the first indicates the genuine interest that the profession generally are manifesting in the important subjects of which it briefly treats. The work is one of distinct value and should be found on the shelves of every physician who desires to know something of the history of medicine, which is really a history of human error and of human discovery.

American Pocket Dictionary.

Edited by W. A. Newman Dorland, M.D. Second edition revised. Philadelphia: W. B. Saunders; Toronto: Carveth & Co. $1.25.

A handy little book, nicely gotten up and well worth the money for every reference. It contains the pronunciation and pefinition of over 26,000 terms used in medicine and allied sciences, and numerous valuable tables, as of nerves, arteries, etc.

The Anatomy of the Central Nervous System of Man and of Vertebrates in General.

By Prof. Ludwig Edinger, M.D. Translated from the 5th German edition. Illustrated with 258 engravings. Philadelphia: The F. A. Davis Company.

The hearty reception accorded by the medical students and practitioners of America to Prof. Riggs' translations of the earlier German editions makes it unnecessary to introduce the work to Prof. Edinger's circle of American readers. The additions which have been made to the original since the last English translation increases the range of its usefulness. Originally addressed to the needs of the medical profession, it now contains matter which is practically indispensable to the general student of neurology or of physiological psychology in the biological departments of our universities.

The fullness of the index adds much to the value of the book, both in its use as a text book and as a book for reference.

Hygiene of Transmissible Diseases: Their Causation, Modes of Dissemination and Methods of Prevention.

By A. C. Abbott, M.D., Professor of Hygiene and Bacteriology, and Director of the Laboratory of Hygiene, University of Pennsylvania. Philadelphia: W. B. Saunders, 1899; Toronto: J. A. Carveth & Co.; pp. 311. Cloth, $2.00.

The work by Professor Abbott is timely. It supplies "the long felt want" of a work which gives detailed information regarding the management of transmissible diseases; their causation from a scientific point of view; modes of dissemination, etc.

The bubonic plague is just now much in evidence. In the work some seven pages are given to a full consideration of the cause, definition, distribution, race, season, history, mode of infection, prophylaxis, etc., of the disease, which alone to the physician who wishes to be abreast with current events, are worth the price of the whole book.

And so on with tuberculosis, typhoid, anthrax, glanders and all other kindred diseases. The reader may be sure he has the lastest and best

(*Continued on page* xvii.)

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THE ASSOCIATION OF PELVIC DISEASE AND INSANITY IN THE FEMALE.

BY DR. ERNEST HALL, TORONTO.

Not a little has recently appeared in the medical press upon the subject of the relation between pelvic disease and abnormal mentality, and much remains to be written before any unanimity of opinion can be reached. A satisfactory solution is beyond the limits of the possible so long as our investigations are restricted to the narrow limits of present facilities. The ploughshare must cut deeper into the unbroken fallow-ground or the mass of material which constitutes the neglected invalid's confined in our state institutions; to these institutions the public look for specialization with its consequent advantages, and with few exceptions they look in vain. So long as our political life is but the sum of the combined activities of the "boss" just so long may we expect to see party loyalty take precedence over scientific training and professional skill, and while we wait the evolution of rationalism in public matters we must not overlook our more immediate duty towards this unfortunate class. Few in active practice pass many months without having a case of insanity presented to their notice, and fewer still seem to realize that the patient is ill physically. Too many act as if the development of disturbed mentality marks the limit of their medical jurisdiction instead of its being the mute, but earnest call to painstaking care and deeper investigation. We recognize in the delirium of acute disease the local irritation, sympathetic connection, or systemic toxaemia, and expect with the return of the physical to the normal, that the mental will also reassert itself, then why should we, simply because pulse and temperature are wanting in their febrile manifestation consider the patient as suitable only for asylum treatment. The insane patient deserves our most anxious thought and our best powers. The keenest diagnostic ability is here demanded and the best skill our profession can produce, but what is the usual method of procedure? An enquiry into the psycnic manifestations only, commitment to the state institution, there to improve or the reverse, to live, or die as the case may be perhaps without one serious enquiry into the primary physical disease.

While we wish to call attention to the prevalence of pelvic disease in the subjects of insanity, it is not to be supposed that disease of these parts is more potent in such causation than that of any other part of the body, except as such parts are in a more direct and possibly unique connection with the sympathetic nervous system or are more exposed to abuse, traumatism, or to the invasion of septic bacteria, but since these considerations apply more directly to the palvic organs (possibly at times over stated) are we not justified in affording to disease of these organs a somewhat prominent place in the causation of mental abnormality? However speculate as we may the frequent association of the conditions referred to is a matter of no little interest. The proving or disproving of the theories suggested in the future.

My results are yet too recent to be of much value (exept to the patients and their friends), I will merely give a brief statement of the pathological conditions found upon physical examination. I have reported only such conditions as in the sane would be considered sufficient to demand treatment.

Cases examined 71, married 53, unmarried 18. Disease found in 67. Of the four with normal pelvic organs, two were married and two unmarried.

The following conditions were found:

Adhesion of clitoris	3 times.
Cytic ovaries	18 "
Adhesions of pendages	23 "
Retroversion simple	4 "
Retroversion with adhesions	8 "
Laceration of perineum	22 "
Laceration of cervix	24 "
Varicocele pampinniform	5 "
Undeveloped organs	1 "
Subinvolution	3 "
Tubo ovarian abcess	1 "
Endometitis	7 "
Prolapsed ovaries	1 "
Peri ovaritis	1 "
Hæmatoma of ovary	1 "
Elongated cervix	1 "
Atresia cervix	1 "
Antiflexion acute	1 "
Cervical polypus	1 "
Fibroid tumors	2 "

In all one hundred and twenty-eight distinct pathological conditions with a percentage of 94% of the cases found diseased.

Is not the condition here indicated sufficient to call the attention of those interested in the administration of provincial institutions. Progress is being made in not a few places, but there are asylums within our Dominion presided over by superintendents who apparently ridicule

the possibility or even of our contentions being indicated, or our theories confirmed. We are either right or wrong, let the truth be arrived at by legitimate methods of investigation The results of a few working independently is incomparable in value to that which would flow from the combined investigations of those in charge of the hospitals for the insane. We have given statistics, made statements and charged the authorities with neglect (not necessary wilful) and now we ask for verification or the reverse. In the name of suffering invalidism, mute in its bonds of unspeakable anguish, we ask that a searching inquiry be made into this matter by the proper authorities and the question of the relation of pelvic disease to insanity be afforded at least a partial solution.

TRINITY MEDICAL SCHOOL OPENING.

The session of 1899-1900 at Trinity Medical College was inaugurated on Tuesday October 4th at 4 p.m., by the time-honored custom of an opening address, delivered this year in the College theatre by the Rev. Dr. Clark of Trinity University. Among those present were Provost Welch, Professor Mackenzie and Professor Young of Trinity College, Rev. Armstrong Black, Dean Geikie, and the members of the Medical Faculty.

The theatre was filled by the friends of the College and the undergraduates, the latter enlivening the proceedings after their most approved fashion. In his introductory remarks Dean Geikie referred in appropriate words to the loss sustained by the College during the past session in the death of an old and honored colleague, Prof. Thomas Kirkland. The Professorship of Chemistry left vacant by his death has been filled by the appointment of Prof. Stuart, whose acceptability to the students was well shown by the applause which greeted the mention of his name

Prof. Clark spoke in his usual happy style, giving some wholesome advice to the students, with whom he is a great favorite. He paid a tribute to the gentleness, honor and kindliness of the medical profession, and urged upon the undergraduates to maintain the high ideals that had been set.

The regular classes began on Wednesday with a large number of freshmen.

Tales of an overcrowded profession evidently have no effect in lessening the numbers of those anxious to enter its ranks.

THERAPEUTICS: PAST, PRESENT AND FUTURE.

BY GEORGE F. BUTLER, M.D., CHICAGO, ILL.

The history of medicine during the early epoch which marked the awakening of scientific thought is enveloped in baffling obscurity; myth and tradition of necessity supplying the place of more intelligent investigation. Notwithstanding perplexities, however, it is of profound interest to the modern student to trace the far distant sources of therapeutic knowledge, examine attentively the gradual development of the healing art, and in the brilliant achievements of the nineteenth century recognize only the flower and fruitage sprung from the seeds of progress and planted in the human mind in remote ages—yes, even in the dawn of civilization. Moreover, the retrospective study of medical science can but enhance our veneration for the struggling intellect of man, and enable us to form a more adequate conception of the patience and labor which have marked the evolution of a physician's attainment.

Such considerations occur to one who looks deeply into the annals of the past, striving to discern so far as existing records permit the earlier status of therapeutics.

It has been philosophically remarked that the progress during the present century, familiar to all, has been marked by the employment of inductive methods of reasoning in the departments of physiology, pathology, and clinical medicine. By the results of such methods and the development of a scientific habit of thought, the science of medicine, which is that of physiology in its broadest sense, the physiology of health as well as the physiology of disease, including the effects of drugs, can well fill its minor place in the science of biology. The old cry of the uncertainty of medicine, the unscientific character of the art of medicine, cannot be held up to us. No Montaigne can at this day hurl the shafts of ridicule and satire that stung to the quick and stimulated honest doubt in the sixteenth century. Well do we know, ourselves, our limitations as well as our power, and with becoming modesty do we uphold the claims of medicine as a science. If science is "knowledge gained by systematic observation, experiment, and reasoning; knowledge, co-ordinated, arranged, and systematized," well fortified is he with cynicism who has the hardihood to maintain the contrary.

The many achievements which have established the present advanced status of medicine are too familiar to require detailed rehearsal. The study of pathology has attracted new and world-wide attention, accompanied by wholly unprecedented results and a skill in scientific investigation of incomparable value to mankind. A greater knowledge of etiology, a larger comprehension of the systematic rationalism of the times, and a more rigid adherence to the scientific truths revealed by practical observation, have served to place the medicinal art upon a loftier

plane of human understanding. Our century opened with a sound preference for inductive research over the less valid generalizations of the past. Virchow, Cohnheim, Koch, Lister, Pasteur, Bernheim, Kitasato, and hosts of other ardent investigators have deftly explored the arcana of chemical, physiologic, and biologic research. Specialists of remarkable acumen have revealed to an astonished world secrets of nature which may be, and indeed are now, of vast importance to the welfare of mankind. Foremost among the new and startling discoveries must be regarded the mysterious yet indubitable effects produced by antitoxins, and their influence upon certain infectious diseases. A consideration of the matter is therefore pertinent.

Great progress has been made during the past year in the field of serum-therapy, though much remains open to question, and many things cannot yet be explained. The field for the investigator is perhaps larger than ever before For a better understanding of the antitoxins and their therapeutic application, a few essential facts should be borne in mind. An antitoxin is not the direct result of bacterial action, but is properly described as an unknown body resulting from the resistance of healthy organism to the toxins of pathogenic bacteria. In practice this antitoxic body comes to us in the blood-serum of animals, usually the horse. When properly prepared and properly kept in aseptic containers, the antitoxins are not all dangerous—in fact, are as innocuous as an equal amount of blood-serum or normal salt solution administered in the same way. We use antitoxins to resist the effects of infection with pathogenic bacteria because the results of such infection are due to the toxins elaborated by those bacteria, and not to the bacteria themselves. The antitoxins do not destroy the bacteria—in other words, are not germicides. In fact, the antitoxic serums are themselves good culture media. One theory of their action is that they neutralize the toxin, thus giving the natural bactericidal powers of the body an opportunity to exercise their function.

The following brief description of the process employed in the laboratory of Parke, Davis & Company will, I trust, show that I am justified in the above definition of an antitoxin.

Young horses in perfect condition are selected and kept under careful observation by an expert veterinarian for three or four weeks. Temperature is taken three times a day for two weeks, and during this time they are carefully tested with mallein for glanders. When a horse is found to be perfectly healthy, he is taken into the stables with the other antitoxin horses, and there receives his first dose of diphtheria poison, or more properly a solution of the toxin of the Klebs-Loeffler bacillus. This is obtained in the following manner: A culture is obtained from the throat of a patient suffering from a virulent attack of diphtheria. The Klebs-Loeffler is isolated from this culture and planted in a flask of bouillon, which is kept in an incubator for ten days. At the end of this time it has attained its maximum toxicity, and the bacteria begin to die of their own poison. The toxin which they have elaborated in the course of their existence is held in solution by the beef tea, trikresol added. This bouillon solution of toxin is then filtered through porcelain to remove the

bacterial cells and any other extraneous matter. It is then ready for injection into the horse. About one-tenth of one cubic centimeter is injected subcutaneously. The horse responds with all the constitutional symptoms of diphtheria, such as a chill, fever, loss of appetite, more or less pharyngeal paralysis with regurgitation of food, and occasionally death of heart paralysis. Upon recovery, which comes within a few days, he is given a slightly larger dose. This treatment is continued for about one year, when he will take from 2,000 to 3,000 times the initial dose without reaction. He is then ready for bleeding. About 6,000 cubic centimeters of blood is drawn from the external jugular vein. This is allowed to clot, and the serum obtained is what is known commercially as antitoxin. Cultures are made from this for the detection of any possible contamination. If there is no contamination present, it is siphoned off into the glass bulbs, in which it appears in the market, first having 0.4 per cent. trikresol added. After standing a few days to allow the development of bacteria, should any be present, cultures are again carefully made, and if these show presence of bacteria in the serum, the whole lot is destroyed. If it is free from contamination, it is ready for the market.

In making the streptococcus antitoxin a culture is made of bacteria obtained from two sources—erysipelas and puerperal septicemia. This is done because Marmorek, Paltauf, and some other eminent bacteriologists believe that streptococci of various infections belong to different families —that the streptococcus of erysipelas is not identical with the streptococcus puerperal fever. It is but fair to say that others equally eminent do not hold this view. To cover this point, the cultures obtained from the two sources are used. The virulence is increased by passing through rabbits. After passing through about fifty rabbits, a culture is planted in beef tea, and the same course pursued as for diphtheria antitoxin. Antitubercle serum is obtained by immunizing horses with the original Koch's tuberculin.

In support of the proposition that the symptoms in infectious diseases are due to the toxins elaborated by bacteria and not to the bacteria themselves, the following quotation from the latest edition of Sternberg's Manual of Bacteriology is given:

"Certain saprophytic bacteria when injected beneath the skin of a susceptible animal multiply at the point of an inoculation and invade the surrounding tissues, giving rise in some instances to the formation of a local abscess, in others to an infiltration of the tissues with bloody serum, and in others to extensive necrotic changes. These local changes are due not simply to the mechanical presence of the micro-organisms which induce them, but to the chemical products evolved during the growth of these pathogenic bacteria. Indeed, their pathogenic power evidently depends, in some instances at least, upon these toxic products of their own growth, by which the vital resisting power of the tissues is overcome. Other bacteria, while they develop chiefly in the vicinity of the point of entrance – by accident or by inoculation—produce a potent toxic substance which gives rise to the general symptoms of a serious character, such as tetanic convulsions (bacillus of tetanus), or intense fever and nervous

phenomena (micrococcus of erysipelas). The pus cocci and various other saprophytic bacteria, when introduced beneath the skin, give rise to the inflammation of abscesses, unattended by any very considerable general disturbance; and also to secondary purulent accumulations—metastatic abscesses.

"That this is not due simply to their mechanical presence is shown by the fact that powdered glass and other inert substances, when thoroughly sterilized, do not give rise to pus formation when introduced beneith the skin or when injected into the cavity of the abdomen. On the other hand, it has been demonstrated by the experiments of Grawitz, De Bary, and others that certain chemical substances which act as local irritants when brought in contact with the tissues may induce pus formation quite independently of micro-organisms; nitrate of silver, oil of turpentine, and strong liquor ammoniæ have been shown to possess this power. And it has been demonstrated by the recent experiments of Büchner that sterilized cultures of a long list of bacteria—seventeen species tested—give rise to suppuration when introduced into the subcutaneous tissues.

"In diphtheritic inflammation of mucous membranes we have a local invasion of the tissues and a characteristic plastic exudation. In true diphtheria the local information and necrotic changes in the invaded tissues are not sufficient to account for the serious general symptoms, and we now have experimental evidence that the diphtheria bacillis produces a very potent toxic substance to which these symptoms are no doubt largely due. The diphtheria bacillus of Loeffler appears to be the cause of the fatal malady which goes by this name, but undoubtedly other microorganisms may be concerned in the formation of diphtheritic false membranes."

In addition to the valuable information afforded us by Dr. Sternberg, additional evidence as to the correctness of this conclusion is the fact that horses while being immunized, give the classical constitutional symptoms of each disease, though they are treated with the filtered toxin which contains no bacteria whatever. A possible exception may be made of anthrax, though Sternberg distinctly states that it acts in the same way

As to the therapeutic action of antitoxin, little or nothing is known positively. It seems reasonable to conclude from experimental evidence that the antitoxin, neutralizes the toxin in the body, and thereby gives the natural germicidal powers an opportunity to dispose of the bacteria. It may be that it has the additional property of stimulating phagocytic and possibly other bactericidal functions. The following experiments made by Messrs. Martin and Cherry, in England, and described in an editorial in the *Journal of the American Medical Association* of August 27, 1898, will be of interest in this connection. Behring, Ehrlich, and Kanthack have advocated the theory that the antagonism between toxins and antitoxins is a chemic, somewhat analogous to the neutralization of an acid by an alkali, while Büchner, Metchnikoff, and others have maintained that it is indirect and operates through the cells of the organism. Martin and Cherry used a snake-venom antitoxin. A considerable number of guinea-pigs were used. At 68° C. the antitoxin was

destroyed, while the venom retained its virulence. In the control experiment with the venom only, all the animals died within a few hours. A number of mixtures were made of one cubic centimeter of antitoxin with twice the fatal dose of venom; others with three and four times the fatal dose. These mixtures were allowed to stand at the usual laboratory temperature (20° to 23° C.) for two, five, ten, fifteen, and thirty minutes respectively, then heated to 68° C., and then injected.

As above remarked, this heat destroyed the antitoxin, so that none was injected. The animals subjected to the mixture of the stronger doses of ten minutes or less died, or were seriously affected; all of those receiving the fifteen-minute mixtures survived, while the thirty-minute mixtures produced no symptoms whatever. Similar results were obtained with diphtheria antitoxin and toxin. These experiments seem to show as far as anything can that the neutralization of toxins may occur in the test-tube, and that the vital processes in the organism and the body cells are not essential. These gentlemen made further experiments by passing a mixture of toxin and antitoxin through a film of gelatin on a Pasteur-Chamberland filter. This was porous for toxin, but not for antitoxin, owing to the difference in the size of their molecules. The toxin which passed through the filter, after having been mixed with antitoxin, was neutral. The unavoidable conclusion from this experiment is that the toxin was neutralized before filtration.

Further experiments were made to prove their theory that toxins are albumoses and antitoxins, globulins, but their experiments do not appear to be conclusive.

The supposition that the administration of antitoxin is followed by a stimulation of the germicidal powers of the body seems to be reasonable, at least in the case of the antistreptococcic serum, since the streptococci disappear with the passing away of the signs and symptoms. On the other hand, the Klebs-Loeffler bacillus is found in the throat for weeks and even months after the disappearance of all symptoms of diphtheria in cases treated with the antitoxin.

The present status of diphtheria antitoxin may be presented in a few words. It has established itself as a specific in the treatment of this disease. During the past year the use of larger doses has become more general, and it seems certain that better results are obtained. The administrators of the Chicago Department of Health give two thousand units in all cases of suspected diphtheria, and employ one thousand units as an immunizing dose. During the months of November and December this department treated 219 cases of bacteriologically proven diphtheria, all charity cases, with a death-rate of 4.1 per cent. Some two and a half years ago, when antitoxin was not used, the death-rate from diphtheria treated by this department was about 35 per cent.

A considerable number of reports have been published showing good results in the use of diphtheria antitoxin in other diseases, as asthma, acute bronchitis, etc. Its favorable action in these conditions cannot be satisfactorily explained. Dr. McClintock says that possibly the natural

immunity of the horse against these diseases will account for the favorable action of his blood-serum in these diseases. In other words, Dr. McClintock thinks its therapeutic action in these conditions is due to the blood-serum, and not to the diphtheria antitoxic body present in the serum.

Antistreptococcic serum gives promise of being second only to the diphtheria antitoxin in point of therapeutic value. It has been most successful in erysipelas and puerperal septicemia. Cases of scarlet fever are reported where it has been useful in shortening the duration of the disease, and in preventing unfortunate complications and sequelæ, such as otitis media and other suppurative processes due to streptococci.

A valuable contribution to the literature on this antitoxin was made by Dr. W. L. Baum, of Chicago, and published in the January number of MEDICINE. A perusal of this essay will repay any one interested in the antitoxin treatment of disease. Dr. Baum reports twenty-two cases coming under his observation in which the serum was used. "Of these nineteen were cases of erysipelas; one of erysipelas plus tubercular nuchal glands; and one of erysipelas with puerperal septicemia and double labial abscess. The last was the only fatal case. In four of the cases of erysipelas only one injection of the serum (10 cubic centimeters) was used, with a reduction of temperature to the normal within twenty-four hours; no relapse. In six others four injections of 10 cubic centimeters each were given upon consecutive days, with a rapid recovery on the fifth day; no relapse. In three the injections were followed by a reduction in temperature within twenty-four hours, but relapsed at intervals of from three to six days. In all of these cases the serum was again used. In one, repeated injections seemed to exercise no effect upon the temperature, and the treatment was followed by sponging, which seemed more effective. The others were old cases in which there had been a marked tendency to relapse; in these not only was the temperature reduced, but the cases showed rapid improvement and recovery. During this time many other cases of erysipelas were under treatment at the hospital, but an effort was made to select those cases which were characterized by high temperature or complications."

Dr. Baum also speaks of Baginsky's report of results in forty-eight cases of scarlatina, in which antistreptococcic serum was employed. In twenty-seven the course of the disease was unusually favorable, the majority recovering without complications. A striking feature in all was the rapid reduction of temperature. In exceptional cases albumin appeared, and a single case had nephritis with tube-casts and blood-corpuscles. In a second group of cases of a severe type the results were not so favorable, although it is possible that in these the amount of serum employed was insufficient. Among the whole number of cases there were seven deaths, or 14.6 per cent. which compares favorably with the percentages (between 22.6 and 24.4) in the years from 1890 to 1895. The mortality among cases treated by other means during the same epidemic as that in which the serum was employed was 24.9 per cent. The untoward effects of the injections were similar to those observed after

injections of diphtheria antitoxin. The future for this serum in the treatment of chronic phthisis is bright with hope, We are told that in the majority of cases simple uncomplicated tuberculosis of the lungs is not a dangerous disease—that it is the added infections, such as streptococcic, staphylococcic, the yeast fungus, and others, that kill. Dr. Robert Reyburn, of Washington, D. C., makes the statement that the vast majority of persons over sixty years of age who die from any cause have had tubercular deposits in their lungs. The fact that post-mortem examinations in public hospitals and other public institutions show tuberculosis lesions in the majority of subjects would indicate that tuberculosis in the lungs is usually a self-limited disease. Of these complications the most frequent, and probably the most important, are the streptococci. In a few cases where the antistreptococcic serum has been used the reports have been almost uniformly favorable However, its value is not by any means demonstrated.

It is to be regretted that tetanus antitoxin does not in clinical use do all that it will do in the laboratory. It has been used in a considerable number of cases, but in nearly every instance without any result that would justify us in regarding it as a great curative agent. However, it should be used early in every case of tetanus, and in large doses, because it is, like the other serums, harmless, and the patient has a somewhat better chance for recovery.

Not until our means of diagnosis have been improved by bacteriological methods or otherwise can we expect great results from the tetanus antitoxin. The following explanation for inefficiency of this antitoxin has at least the merit of originality on the part of its author, and some plausibility: "The toxin of the tetanus bacillus has a chemical affinity for nerve tissue, and enters into chemical combination with and destroys such tissue, and it is this chemical conbination and destruction in the nerve centers which produces the tetanic convulsions. The antitoxin has no such chemical affinity and neutralizes only that toxin remaining in the blood-current, and of course it cannot repair the nerve tissue lesion. When we are able to diagnose tetanus early, the antitoxin will be used successfully treated with intracerebral injections of antitoxin, the theory being that the antitoxin should be placed where it could neutralize the toxin which is producing the convulsions by means of its action on the nerve centers. The value of this method of administration has not been proven fully, as many cases have been treated unsuccessfully."

As a preventive measure, the tetanus antitoxin is all that can be desired. Dr. Joseph Hughes, one of the most eminent and conservative veterinary surgeons in Chicago, says that he has used the tetanus antitoxin as a prophylactic in over five hundred cases following wounds both surgical and accidental. Not one has developed the disease, though he has used it where he was justified by former experience in expecting tetanus to show itself. Dr. Hughes uses ten cubic centimeters as a protective dose and injects it five to seven days after the suspected inoculation.

The time has come when it is the duty of every railroad company to authorize the use of this serum as a prophylactic by its surgeons. It

should be used by every surgeon treating wounds liable to be infected with the bacillus tetanus. It costs a very small amount of money to protect a man absolutely against this terrible disease.

The antitubercle serum has not proven itself of more value than a great number of other remedies vaunted as specifics in this disease. Maragliano, of Italy, continues to send encouraging reports, and has recently erected a tuberculosis hospital in or near Rome where his antitoxin is to be used. It must be confessed, though regretfully, that this serum has not been a marked success in this country.

The bacteriologists of the Chicago Department of Health are at present studying the bacillus of influenza, which they have succeeded in isolating. Though it is a long journey from the discovery of a bacterium to the successful production of an antitoxin to the effects of that germ, still it is a matter of interest to know that the exact cause of the dread epidemic is at last known.

These scientists are now in the midst of a thorough investigation of the bacteriology of scarlet fever.

When using antitoxin the necessity of obtaining serum of a reliable manufacturer cannot be too strongly urged. Everything depends upon the laboratory. For instance, we cannot tell from the appearance of a package of serum whether it contains one hundred units or one thousand units, or none. We cannot tell whether it comes from a healthy animal or whether it was contaminated with bacteria when bottled, or whether it has become contaminated after leaving the laboratory. Only that put up in heremetically sealed bulbs is absolutely free from the possibility of contamination.

Foreign serums have shown themselves to be inferior to the American in some respects. This is due, first, to the fact that the foreign antitoxin has been shipped a long distance; secondly, the technique of production is not so perfect: and thirdly, the European manufacturer regards the market in the United States in the light of an orange to be sucked as dry of profit as possible in the shortest time. In the March number of *Pediatrics* is a report which says that the serum on the London market in 1897 was a worthless article; that one German house supplied in London an antitoxin which was warranted to contain one hundred units, but which in experiment gave only 17.5, while another sold as containing 200 units gave only 30 units. Only a short time ago there was current an able-bodied rumor to the effect that German manufacturers were sending to this country diphtheria antitoxin which had been rejected by their own government. The vast majority of unfavorable reports on the use of the antistreptococcic serum have come from European physicians or from physicians of this country who have used the foreign serum. The European manufacturer does not take so long a time to immunize his horses, and does not usually possess so virulent a toxin for immunizing purposes. Then too, the foreign serum is necessarily subjected to many and great changes of temperature incident to long transportation, while wending its devious way from the European laboratory to the

American physician. While the American laboratories are willing to exchange old serum for fresh, the foreigner of course cannot do this, and after his serum has become too old it is a dead loss to the physician or druggist, or is injected into the patient sometimes with unfortunate consequences.

The action of Professor Emil Behring in obtaining a patent on diphtheria antitoxin and his present efforts to obtain a patent on tubercle antitoxin, have justly met with the decided disapproval and condemnation of every American physician who has any belief in the ethics of the profession. Various medical societies, including the Mississippi Valley Medical Association, the Chicago Medical Society, and many others, have passed resolutions expressing their indignation, and promising their active support to the American manufacturers who are engaged in litigation with the owners of the patent. Perhaps no subject has been taken up so promptly by the medical press Every one of the best periodicals has had at least one editorial scoring Professor Behring in the severist terms.

Permit me to add to the foregoing detailed treatment of serum therapy a few considerations touching another instance of progressive medicine—our improved knowledge of the laws governing the science of pharmacology.

A great step in the advancement of the science of pharmacy is the accurate estimation of the activity of various drugs by testing them upon living animals. This is known as the physiological assay. For some years the better class of manufacturing pharmacists have made a chemical assay of the various drugs amendable to such an examination. It has long been known, however, that the activity or strength of many drugs, such as cannabis indica, ergot, strophanthus, and digitalis, cannot be determined by the chemist. For instance, ergotin does not represent the therapeutic value of ergot, nor does cannabin represent that of cannabis indica nor digitalin that of digitalis. Unfortunately the drugs of this class are the very ones which vary most widely in their activity, and are also the ones which the physician gives most carefully, and from which he wishes to obtain the most definite results. By the physiological assay the manufacturer tests each lot of drugs on a number of animals and does not allow the product to leave his laboratory until he has obtained definite results. The conclusion is inevitable that the physician will obtain his results much more surely with preparations so standardized than he will with those which have not been assayed. A brief description of the method of these physiological tests as given by Dr. E. M. Houghton is interesting.

From times prehistoric it has been observed that in fowls, swine, and other animals, as well as man, fed with ergotized rye or with bread prepared from the flour of such grain for a considerable length of time, the poisonous action of the fungus is frequently manifested by gangrene and sloughing of the peripheral parts, as the comb of fowls, ears of hogs, and ears, nose, fingers, and toes of man. Two particular types of ergot poisoning have been observed, namely, ergotismus gangrenosus and ergotismus spasmodicus. Kobert and his pupil Grünfeld were the first to

employ the feeding of ergot to roosters in order to determine the activity of the crude drug or of the products isolated from it. However, these investigators employed the action only for experimental purposes.

In making the preparations of ergot, the carefully selected crude drug is tested by being fed to roosters, a certain number of grains to a certain weight of fowl. If it is of normal activity, it produces the local effect in the comb and wattles. This drug is then carefully exhausted with the proper menstruum, and the finished product is again tested in the same way. About one-third of the ergot thus tested is found to be inert. If the finished product proves itself below the standard, more of the drug is exhausted with the same menstruum.

The therapeutic importance of the heart tonics—digitalis strophanthus, and others of the group—is now recognized, and these drugs are universally employed by physicians in their daily practice. We are not generally accustomed to think of the heart tonics as being the most poisonous remedies employed in therapeutics, yet it is true. According to some of the best authorities, the maximum dose of extract of digitalis is about one-half as great as the maximum dose of extract of belladonna; while strophanthin, the active principle of strophanthus, is three times as poisonous as atropine, ten times as poisonous as strychnine, and twelve times as poisonous as absolute hydrocyanic acid. It would be considered dangerous pharmaceutic practice to allow preparations containing atropine, strychnine, or hydrocyanic acid to be sold without first being subjected to careful chemic assay and standardization. The United States Pharmacopœia gives elaborate methods for the exact quantitative determination of these constituents; while owing to the fact that the obtained active principles of the heart tonics are glucosides so easily decomposed by chemic manipulation that an assay cannot be made, no directions whatever are given for the determination of the physiologically active properties of the galenical preparations of these drugs, and the tests for the purity of the respective glucosides are of little value. I shall speak of the physiologic assay of strophanthus, its active constituent strophanthin, and its pharmaceutic preparations. These will serve as types. About thirty varieties of strophanthus have been discovered. It is claimed that only six varieties contain strophanthin, while a few contain a still more active glucoside, ouabain. As found in the American markets, the drug generally consists of a varying mixture of the seeds of *Strophanthus Kombe* and *Strophanthus hispidus*. Preference is generally given to *Strophanthus Kombe*, since it contains about 0.95 per cent. strophanthus, while *Strophantnus hispidus* contains about one third less. The amount of contained strophanthin is partly dependent upon climatic conditions. It is a well known fact that the physiologic activity of digitalis leaves varies within wide limits from year to year. Holmes, of London, who has given this matter much attention, claims that only by purchasing the seeds in the follicle and testing a seed from each follicle can a reliable preparation of strophanthus be made. An assay based on the amount of extractive contained in a given tincture is of little value to the physician, since the extractives consist largely of chlorophyll and other inert substances.

In making a qualitative assay a solution of the crude drug or its active constituent is applied to the laid-bare frog's heart, and the slowed rhythm, the less and less perfect diastole, the increased systole, and finally complete inhibition in systole, are noted. Intravenous injections of such solutions into dogs and rabbits are made with careful observation of the variations in blood pressure and heart-beats, as shown by graphic tracings reported on the kymograph.

A quantative estimation by pharmacologic methods is a much more difficult problem. Many series of experiments were necessary in order to decide what method is best for this work Finally, the most practical method was found to be the determination of the minimum fatal dose on lower animals. Accordingly, rabbits, guinea-pigs, rats, frogs, etc., were employed, the frogs being finally chosen as the best adapted for the purpose. Different species of frogs vary considerably in reaction to the poisons, but the same species behave much alike. The method of administering the poisons and observing results may be briefly stated as follows: The strophanthin or tincture of strophanthus is dissolved in normal salt solution in such strength that the total quantity to be injected shall not exceed five cubic centimeters. The fluid is injected through the frog's mouth into the abdominal lymph sac. Great care is taken not to puncture the skin, as this will allow a portion of the injected fluid to leak out. After injection, the frogs are placed in wide frog glasses, the plates containing about a quarter of an inch of water. Several series of five frogs each are injected for each sample of the drug to be assayed, the first series to be injected with a drug of known standard strength. The second series is injected with doses varying considerably in size. The third series is injected after the approximate dose of poison has been found from the second series. From the third series the minimum dose is almost surely fixed A fourth series is finally injected, which fixes the limit of strength very closely. The minimum fatal dose should kill at least three frogs out of five. If a less number die, other series are injected with slightly increased doses.

A series of fourteen experiments made with tinctures prepared from different lots of the seed as found on the market showed the fatal dose of the strongest to be .00010 cubic centimeter per gramme of body weight, and of the weakest to be 0.33 cubic centimeter per gramme of body weight. Samples of strophanthin were obtained from three of the best manufacturing chemists in the world. These were supposed to be pure strophanthin, yet one was ninety times as strong as another, the others varying between these limits. The digitalin varies greatly in strength, but much less than strophanthin. Both strophanthin and digitalin are given daily in tablet or pill form, the amount of active ingredient being apportioned by weight—a splendid opportunity for the sudden termination of a favorably progressing heart case should the patient happen to have the presciption refilled from a fresh bottle. The only way that such remedies can be taken with any degree of safety is to have them prepared from stock of known physiological strength.

The drugs assayed by the physiological method are: Ergot, cannabis indica, digitalis leaves, strophanthus seeds, convallaria majalis, elaterium, and cocaine. It is worthy of note that of the crude drug cannabis indica about 50 per cent is found to be inert.

We have traversed—albeit cursorily when we consider the magnitude of the theme—the vast field embraced in the history of medicine. In closing the subject a retrospective glance will show the magnificient achievement of the present day compared with the crude knowledge of former centuries. The acquisition of knowledge, however, is like the ascent of a mountain—the higher the point attained, the wider the horizon and the less definite our preception of details. We have, it is true, reached a clearer, purer atmosphere; yet, as the law of compensation presses upon us, we must constantly devise new methods of scientific conquest. As the telescope has overcome space, let us hope that no minutiæ of medical knowledge will forever resist the genius of patient investigation in the domain of therapeutics.

"Medicine has for its object the relief of suffering and the prolongation of life. There exist many limitations to the successful accomplishment of this object. The limitations of medicine are less numerous to-day than in the past, and many of the obstacles to success in the prevention of disease and the healing of the sick will be removed in the future.

"Medicine, as a whole, is not a science. Of some branches which enter into it our knowledge is exact, of others our information is theoretic, while every day adds to our knowledge and removes many obstacles from the path of progress. The chemic laboratory and the microscope have done much and will do more to make medicine a science. Progress in knowledge of chemistry and biology has been wonderful in the last twenty years, and this knowledge has removed many of the limitations of medicine. Strange as it may seem, the limitations of medicine which man is striving to remove are due to man himself.

"Man is the highest type of animal, endowed with a mind capable of reason, and gifted with a means of communication with his fellows; and yet man is the very source of his own undoing. The original man was doubtless perfect in mind and body, the master of all created things. Like all organic life, his span was made up of periods of birth, growth, maturity, and decay. He was doubtless able to combat his foes, and sink at last, in the fulness of his years, into euthanasiac sleep. The history of man since the fall is like the repeated pages of a book. Vicious habits mark his foot-steps, whether civilized or barbarian; his habits of work and of rest, his food and drink, are not rational; he contaminates the air he breathes, the water he drinks and the food he eats. The water sources and the earth, contaminated by man, become soil for the growth of the germs which infest and sicken him. His contaminated body begets a prototype, imperfect in mind and body. From the cradle to the grave a degenerate being, he fights against a mighty host, bred of his own shortcomings. Most of our infectious and contagious diseases may be classed as preventable; most of them are filth diseases, and they cannot exist in the presence of perfect cleanliness."—*Medicine.*

RECTAL IRRIGATION IN GYNECOLOGY.*

BY CLARENCE REGINALD HYDE, A.M., M.D.

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The theory of rectal irrigation in itself admits of no new view, but its recent employment by specialists marks a distinct advance in routine methods, and furnishes a valuable acquisition to local therapeutic and mechanical measures in gynæcological practice, both before and after operative procedures. No apparatus yet devised for this specific purpose so scientifically meets the requirements as Kemp's tube, introduced to the profession some two years ago. Rectal irrigation will never supersede vaginal douching, nor is it intended to. Its advocates advance no such claim. But as a substitute in selective cases, it is sure to occupy a prominent position in our modern armamentarium. Those interested in female complaints will hardly evince a hasty desire to discard vaginal douching entirely in preference to rectal, having become too firmly convinced of its equal value when properly administered as taught by Sims and Emmet. And there is no sound reason why they should. The ideas herein advanced are not to be conceived as an attempt to advocate the superiority of rectal over vaginal irrigation, but to demonstate that in certain types of ailments the former does surpass the latter. On such premises is this article based.

The writer's attention was first directed to this novel technic while interne on Dr Hanks' service in the Woman's Hospital. At that time it was customary for nearly all his ward patients to receive rectal irrigation, especially those evidencing retroversions, pelvic exudates, tubal and ovarian lesions in all stages, and also constipation. On questioning both patients and nurses as to the immediate effects observed, positive opinions were received as to its superior action. Since then, on every possible occasion, rectal irrigation is prescribed, not because I am a faddist, but an extended personal experience convinces me of its reliability and allows me to unhesitatingly subscribe to its value. On two occasions only has it failed to give actual results.

It is interesting here to note in what manner rectal irrigation effects its particular action. When we recall how clearly defined the uterus and its appendages appear during a bimanual rectal examination, and how intimately the genital and rectal circulations anastomose, a clearer conception is gained of the more constringing effect of a prolonged rectal over vaginal irrigation. By the ballooning of the entire rectum with the hot fluid, a larger vascular area is directly presented to the heated medium, and its ultimate effect on the vessels is greatly increased. In vaginal douching, the introduction of the tube is necessarily limited by the vaginal vault, which allows the fluid to come into contact only with the

*Read before the Woman's Hospital Society, N. Y., May 16, 1899.

vaginal walls and the portio, and affording no such excellent opportunity to be brought into almost immediate proximity to adnexa and the whole posterior surface of the corpus uteri, as in rectal. This statement will readily be acknowledged by all familiar with pelvic anatomy. Clearly, then, rectal irrigation permits these viscera and their abundant vascular supply indirectly to be more fully bathed by the hot water than in vaginal. In addition, by its retroactive effect on the intestines themselves' there is promoted through the sympathetic system, a stimulation of the unstriped muscular fibers in their walls, which not only increases peristaltic action, but seems to act reflexly even on the cardiac muscle, as noted in the use of this form of irrigation in counteracting shock. This fact is noticeably apparent by a comparison of the quality and tension of the pulse before and after irrigation. Part of this cardiac stimulation may be due to absorption of the saline and its filling of the vessels. The heart thus receives more fluid, and necessarily its action must be spurred on in its endeavors to compensate for this increased fluid. The employment of rectal irrigation is not the administration of an enema, and in private practice it is policy to make this point clear to the patient at the outset.

As regards technique, a few minor but important details are essential. The tubes are made of rubber, aluminum or glass. The latter is advisable, as its cleanliness can always be positively demonstrated. It is preferable to use the largest sized tube, and, prior to using, thoroughly anneal to diminish its brittleness. Insert into the rectum as an ordinary rectal tube, using no unnecessary force. Sphincteric spasm is best overcome by absence of haste and a slight effort on the patient's part to bear down as in defæcation. Either Sim's or the dorsal decubitus may be elected. At least two gallons, preferably six to eight, 110°-115° F., give best results. Negative effects arise from the use of too small a quantity of water and not of a sufficiently high temperature. A gentle backwards and forwards motion of the tube, accompanied by a slight rotary action, is necessary to dislodge any particle of fæcal matter which may obstruct the lumen, and also to prevent any drawing of the rectal mucosa into the fenestra, as the suction in the reflux tube from siphonage action is considerable. From neglect of moving the tube as described, portions of the mucous membrane may be forcibly detached on withdrawing the instrument. Care only is necessary to obviate any such tissue destruction. One expert in the use of rectal irrigation can employ it without even soiling the bed's or the patient's linen, but at first trial it is advisable to spread a rubber sheet under the hips or use the dorsal position with patient on a douche pan The vesical tenesmus, which at times supervenes, seems best relieved by suppositories of iodoform, conium, and belladonna, which also tend to quiet any rectal irritation which may persist.

As to the cases in which rectal irrigation is applicable, considerable limitation is allowable. One who makes a specialty of employing this form of hydrotherapy soons finds himself supplementing his prescribed treatment of all pelvic affections with rectal irrigation in addition to

other palliative measures. Experience and judgement are the criterion, when to use or not. It is not my intention to relate successive cases in detail, with appended statistics, but rather to select a few of the different types of gynæcological cases where rectal irrigation has proved serviceable, and also those in which it furnishes the most instructive results.

In virgins with rigid hymen or small introitus, who present one of those typical histories of leucorrhœa following a prior, and, perhaps, obscure, attack of localized peritonistis (due either to a previous exanthematous attack, bathing or other exposure during menses, with succeeding temporary suppression), when the effect of a vaginal douche is required, rectal irrigation is *par excellence* the ideal method of depleting the pelvic circulation. Especially is this true in the leucorrhœas of retroversions or other displacements, and in ovarian congestions There is, after all, a natural hesitancy in demanding that young girls should be forced to employ a vaginal douche, especially if prolonged, which it needs must be to produce its effect. Rectal irrigation not only acts as an efficient substitute, but it obviates any relaxation of hymen, and also precludes the enervating effect of a prolonged hot douche in a young unmarried female. Instances are not rare in which these prolonged douches have not only induced nausea, but even syncope. Gynæcologists are not yet agreed as to the advisability of prescribing prolonged douches in every instance, especially if there is not abundant leucorrhœa. A large quantity of water is necessary to produce the desired vascular constriction, and a small quantity will not exert such a benefit. It is also a well-known fact that prolonged douching lessens the normal vaginal acidity, which is Nature's barrier to the entrance of pathogenic organisms, with the possible exception of the gonococcus of Neisser and the bacillus tuberculosis. To this end have lactic-acid douches been recently advocated by Ilkewitsch and Dalché. Advocates of rectal irrigation can advance a step further, avoiding vaginal douches entirely in young unmarried girls, aad yet accomplishing the same ultimate effect.

I do not decry vaginal douching, for there are times when it is imperatively needed, for cleansing if nothing else, but in the class of cases just mentioned, rectal certainly equals vaginal irrigation, and the girl is not subject to a prolonged douche. There is too much indiscriminate douching in young girls, and many physicians have slight consideration in ordering six to eight quarts of hot water to counteract the leucorrhœa of some pelvic ailment. Such conclusions advanced before the Woman's Hospital Society may appear heretical, but clinical and personal experience proves the right to formulate these seemingly arbitrary opinions. It is my firm belief that the limitation of vaginal douching is not quite fully mastered by all, or, if so, that, carelessly, physicians do not discriminate between its restriction and necessary use.

Some of the most striking examples of the efficacy of rectal irrigation occurred during my interneship in the Woman's Hospital. The following case is narrated in detail as it was one of many under observation :

Mrs. C., æt. 40 ; vaginal hysterectomy, with considerable hæmorrhage and shock succeeding operation, followed two days later with complete intestinal paralysis and evidenced of sepsis. Extreme tympanites, pulse

160, weak and wiry, temperature 104.2°, and patient rapidly becoming moribund. Repeated enemas and free use of cartharties of no avail. Prognosis grave and recovery regarded doubtful. To my knowlege rectal irrigation had never been employed previously in any such case in this hospital. Six gallons given, 115° F. The intestines, which before had refused to react to any stimulation and expel their contents and gas, now feebly responded after the second gallon, and strongly during the remainder of the irrigation Large quantities of gas were voided, the patient became less restless, and the temperature and pulse fell preceptibly in a short period of time. Her condition was almost immediately improved, and she made an uneventful recovery. The irrigation was continued at intervals for the following few days. It was the general consensus of opinion that there had been a localized septic peritonitis, sufficient to induce intestinal paralysis. Certainly the outcome was nothing short of remarkable, and occasioned at the time some considerable interest among the staff. Within a few days there was again furnished another opportunity to demonstrate the absolute and relative value of rectal irrigation in a case of vaginal section for double pyosalpinx. Mrs M., æt. thirty-three, panhysterectomy. Severe hæmorrhage during the operation compelled the use of a large number of clamps, which were undoubtedly the origin of the infection which later supervened. The patient's condition was almost identical with that of the first. After removal of the clamps in thirty hours, rectal irrigation proved successful in warding off the development of an undoubted fulminating septic peritonitis, so suddenly did the symptoms present themselves after operation.

From that time, rectal irrigation became a universal panacea in the hospital, and was resorted to on every possible opportunity by the internes. It is not to be inferred that every case of intestinal paralysis of septic peritonitis will recover, though the cases reported are not the only instances in which a fatal ending has been avoided. Rectal irrigation can, however, recommend itself, even as a *dernier ressort.*

Its value is again forcibly demonstrated in shock following operation, using normal saline as the agent. I speak now of shock accompanying severe major operations, with no evidence of hæmorrhage. Hanks strongly advices this, and reports excellent results. Even in secondary hæmorrhage, after the bleeding-point has been secured, its efficacy cannot be denied. Under such conditions and cognizant of the absorptive power of the rectum so far as saline is concerned, we note in addition to increase of bodily fluids, a secondary stimulating effect on the heart as previously mentioned. However, intra-cellular or intra-venous infusions are more popular in emergencies.

Every gynæcologist has had the irritating experience of post-operative patients complaining of pelvic distress, dull and aching in character or annoyed by the slight tympanites which occasions the convalescent so much discomfort. I confidently assert that the use of rectal irrigation in such conditions will produce in the patient a fuller sense of relief and more permanent in action than any known drug or form of enema. This

can be well illustrated in a recent abdominal section in which this pelvic distress yielded quickly to the use of the Kemp tube. The annoying sequelæ obtaining during the first few days disappear readily under this form of irrigation. An interesting private case of intestinal colic is recalled, supposedly due to the presence of adhesions, with unremitting nausea, pain, and restlessness. All the much-lauded specifics absolutely failed, and enemas resulted negatively. Retal irrigation afforded most marked relief, controlling the nausea and decreasing the pain as to occasion patient little suffering. Its action on the adhensions, if any, is, to me, unexplained.

The prevalence of chronic constipation in the majority of women afflicted with their peculiar diseases, is so common as to call for more than routine methods. Perseverance only causes an amelioration of such a condition and oftentimes the physician is unable to trace the ætiological factor of this obstinate symptom. Rectal specialists, especially Mathews of Louisville, have devoted entire chapters in their writings to the careful consideration of this ailment. The latest addition to our present array of remedies seems to be rectal irrigation, through the complete stimulation of the entire lower alimentary tract, and the subsequent addition of tone to its mucosa. Surely the theory is tenable and justified by the apparent improvement of many of the Woman's Hospital patients. It has been impossible to record their subsequent condition—whether betterment or failure. My own experience, in private, includes one case, a distinct failure. This patient after an abdominal hysterectomy, developed constipation to such degree as to cause her considerable mental worry, as she inferred that some untoward systemic effect would follow from absorption. Careful questioning elicited a negative constitutional history, absence of hæmorrhoids, good levator and posterior vaginal wall, and no evidence of venous stasis. The free use of hot water and phosphate of soda, ℥i every morning were advised, but she was still compelled to use purgatives. On advocating rectal irrigation, she conscientiously employed it nearly two months, about three quarts of saline every night. The constipation disappeared in the interim, but returned on discarding the irrigation. Her condition at present is as formerly.

One other failure is to be noted, a case in which I entertained the highest hopes. Mrs. R., æt. eighteen; acute gonorrhœal pyosalpinx. It was my good fortune to be able to observe acute gonorrhœa from inception to present culmination, through the vaginitis, acute septic endometritis, double pyosalpinx, and punctuated at short intervals with three successive attacks of localized peritonitis, all within the space of seventeen days. During the peritonitis, ice bags and rectal irrigation were ordered. The irrigation produced absolutely no results, and was extremely ill-tolerated, the patient complaining of severe pain during its administration, vesical tenemus, and a constant desire to evacuate the bowels at intervals afterwards, with futile results. Her appeals forced me to abandon a method which, reasoning *a priori*, promised benefit. Its failure was a distinct surprise. The deduction may be assumed that rectal irrigation is not the ideal remedy in acute suppurative processes,

but rather is its field in acute and chronic catarrhal inflammations and congestions, which it relieves through depletion of the intimate vascular anastomosis with the rectal vessels.

To epitomize. Rectal irrigation has been found to have a distinct value in

1. Leucorrhœas.
2. As a substitute for vaginal douching in young girls.
3. Acute and chronic ovarian and tubal lesions, with the possible exception of pyosalpinx.
4. Intestinal paralysis following sepsis.
5. After major pelvic operations to relieve any abdominal discomfort or tympanites.
6. Intestinal colic.
7. Doubtful in constipation.

There is a distinct trend towards individualizing one's own particular line of treatment, and essaying to maintain an independent position. Established ideas are rarely rejected in preference to innovations, unless the latter are qualified to merit careful attention. Of these, rectal irrigation commends itself to gynæcologists for thoughtful and unprejudiced consideration, as having seldom failed to meet the test on fair trial.—*The American Gynecological and Obstetrical Journal.*

OBSERVATIONS ON THE ORIGIN OF GALL-BLADDER INFECTIONS, AND UPON THE EXPERIMENTAL FORMATION OF GALL-STONES.*

BY HARVEY CUSHING, M. D.,
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Dr. Hunners' report adds one more to the list of cases in which post-typhoidal gall-stone formation and the persistence of Eberth's bacillus in the gall-bladder have combined to set up a suppurative cholecystitis, demanding operative intervention.

There seems to be little doubt at present but that the original source of infection in these cases is a hæmatogenous one, the bacilli first entering the portal circulation through the atrium afforded by the intestinal lesions. As Fütterer has shown experimentally, organisms so introduced are probably for the most part rapidly eliminated by the liver and thus enter the biliary passages, though many may pass into the general circulation, thus producing a temporary peripheral septicæmia The frequency of such a typhoidal septicæmia has been demonstrated at this hospital by Dr. Gwyn, who has succeeded in cultivating typhoid bacilli from the blood of eight out of thirty patients examined for this purpose in Dr. Osler's clinic and the occurrence in a variety of situations of peripheral suppurative lesions for which the specific organism of the disease is responsible is thus readily explained.

The belief is quite universal, however, that the biliary infection comes about by ascension and that the organisms enter from the intestine into the common duct. Thus Gilbert, in 1894, held that *B. coli* played the most important rôle in cholecystitis because it was found by him in the duodenum in numbers exceeding all other species and because it was possessed of motile properties which enabled it to enter the common duct. More recently Richardson is quoted by Keen as also expressing a belief in the ascending or intestinal source of infection of the biliary apparatus. He found on one occasion at autopsy "pure cultures of the typhoid bacillus in the gall-bladder, duodenum and jejunum, and it was only when the ileum was reached that colon bacilli began to appear at all." Were the infection an ascending one, I am inclined to believe that other intestinal bacteria from the ileum would have been found associated with the bacillus typhosus in this case.

Recent investigations (unpublished) upon the flora of this part of the intestinal tract have demonstrated, in agreement with the observations of Gilbert and Dominici, that the duodenum, especially of rabbits, is very free from micro-organisms. On one occasion a cubic centimeter of a 24-hour bouillon culture of *B. typhosus* was injected into the ear vein of a

*Remarks before the Johns Hopkins Medical Society to accompany Dr. Hunner's report of a Case of Typhoidal Cholecystitis.

rabbit. Two days later from the gall-bladder and duodenum pure cultures of the organism were recovered—a result similar to Richardson's but resultant of course to a hæmatogenous infection. I was not, however, always so fortunate in recovering the organisms. In *Rabbit* IX, which case I will mention later, two days after a similar inoculation into the ear vein, the organisms were not recovered from the bile and in all probability they had been entirely eliminated. I have seen a similar rapid disappearance on direct inoculation into the gall-bladder in dogs. In one animal the bile was sterile twenty-four hours after the inoculation.

Bile itself, contrary to the widespread belief in its antiseptic properties, is a favorable culture medium for most organisms and it is surprising that normal bile should ordinarily be sterile, as Gilbert has demonstrated, when we consider that micro-organisms are in all probability frequently being passed out with it through the liver.

Leubuscher believes that the sterility rests on an unhindered overflow, some degree of obstruction being requisite for the persistence of micro-organisms.

Létienne showed that bacteria are more likely to be present, when there is no disease of the gall-bladder itself, in association with abnormal conditions of the body. In forty-two cases examined he found *Staphylococcus albus* 13 times, *B. coli communis* 13 times, non-liquefying *Staphylococcus* 3 times, *Staph. pyogens citreus, aureus*, etc., 1 each, *B. typhosus*, *Pneumococcus*, etc., 1 each. On seven occasions the bile was mono-microbic, on 17 poly-microbic, and on 18 sterile. These observations merely show what a highway for micro-organisms the biliary passages are. The observation of Netter is in accordance with Leubuscher's view that ligation of the common duct in animals is followed by an acute inflammation of the biliary passages. Here also the infection is with less likelihood due to an ascending process than to an inflammation induced by micro-organisms, possibly of intestinal origin, which, eliminated by the liver from the portal system, enter the bile duct from above. Such an infection, however, does not necessarily follow a pathological occlusion of the common duct. Dr Halsted recently removed a primary carcinoma of the duodenal papilla which had caused complete obstruction. Cultures from the common duct were negative as well as those from the gall-bladder, which was greatly distended by a pale mucoid fluid containing a deposit of fine biliary sand.

The typhoidal lesions, however, offer a portal of entry not alone for the typhoid bacillus but also for all other bacterial inhabitants of the intestine. The *Bacillus coli communis*, for example, which organism, recent observers, as Dreyfuss, Sanarelli, de Klecki and others, have shown to acquire increased virulence in the presence of the inflammatory products of typhoid and other entertides may similarly enter the portal circulation. This, Dr. Welsh demonstrated some years ago to be the case. The colon bacillus, however, apparently rarely passes beyond the liver into the general circulation, its ravages being limited to the confines of the portal system. It consequently may be as frequent a factor and indeed is actually a more frequent agent in the production of post-

typhoidal gall-bladder complications than the specific cause of the disease itself. This has recently been emphasized in a paper read before this society.

As was shown in one of the cases reported at that time, there was an active serum reaction toward both *B. typhosus* and the colon bacillus isolated from the gall-bladder. This increased virulence of *B. coli* in many cases of typhoid, being the cause of unusual agglutinative properties of the host's serum toward this organism,* may account for the occasional clumping of *B. Coli* in the bile when it has once entered the gall-bladder in correspondence with the reaction toward the bacillus typhosus which seems to be the rule there at some period of the fever.

Salimbini regarded the agglutinating property as one only acquired by the blood-serum after being shed, and expressed a disbelief in its ocurrence in the living body. Durham, however, disagrees with this on the ground that numerous observations on peritoneal injections in immunized animals have always shown that agglutination occurs within the peritoneal cavity. Since it has been proven that the bile of typhoid patients acquires agglutinative properties, this reaction *in vivo* in the gall-bladder naturally would occur in a fashion similar to that produced experimentally in the peritoneum. Richardson has examined at autopsy the bile of fatal cases with this in view and found large clumps of bacilli in every case but one (five out of six). It is important to note that the blood-serum of this one case had failed to show an agglutinative reaction during life.

What relation the organisms have toward the disposition of bilirubin calcium and stone-formation has not been conclusively proven. The views of Naunyn are generally accepted, though some of his chemical theories, chiefly that relating to the local production of cholesterin, have been questioned by Chittenden.

The organisms may be present in the gall-bladder just as in the urinary bladder during the course of typhoid fever without producing any evidence of cystitis whatever or exhibiting any tendency to become attenuated or to agglutinate, though the patient's serum may give a decided reaction outside of the body.

Just what influence tends to agglutinate the organisms *in vivo* and whether the "clumps" formed really act primarily as the nidus for stone-formation has not been actually demonstrated.

The mere clumping of the organisms in the bile has *in vitro* no macroscopical effect whatever on the bile. I have inoculated bile, aseptically withdrawn from the gall-bladder of animals, with the bacillus typhosus,

*The fact that human serum in health often possesses agglutinative properties toward varieties of *B. Coli* probably is only an evidence of an acquired characteristic following an unrecognized invasion of the organism during the course of some preceding enteritis. Such an occurrence has probably been a secret forerunner of most cases of biliary lithiasis; the organisms, being eliminated by the liver, enter the gall-bladder and under certain favoring circumstances produce lithiasis, which after the infectious agents has died out may give no subsequent symptoms. It is not improbable that a chronic interitis such as may be associated with alcoholism may constantly feed the liver with intestinal bacteria, chiefly *B. coli communis*, and thus ultimately be responsible for the cirrhotic changes which takes place there. The demonstration that the organisms found by Adami in cirrhotic livers are colon bacilli would favor this view.

and subsequently precipitated the bacilli by adding serum from a typhoid patient without producing any appreciable effect on the medium whatsoever.

The mere presence of the micro-organisms in the bile, however, may alone not be sufficient to incite the catarrhal process, the "lithogenous catarrh' of Naunyn, which is generally conceded to be an essential element in the process. I have never been able to produce any such catarrhal process in dogs or rabbits by simple intravenous injection of the bacillus typhosus or by injection of the organisms directly into the gall-bladder, though the animals have been examined at periods from a few days to several months.

Organisms may be recovered from the gall-bladder long after the original injection, and they frequently are found "clumped," as Blachstein and Welsh observed some years ago. The organisms may so remain for an indefinite period without producing any apparent inflammation of the mucosa. To induce this requisite catarrhal process, some other element, presumably some form of irritation such as traumatism or some hindrance to the proper evacuation of the gall-bladder is necessary.

I am able to show to the society some small biliary calculi of typhoidal origin obtained from the gall-bladders of rabbits, in both cases at the time of inoculation the biliary apparatus having been intentionally maltreated.

On one occasion the organisms (non-attenuated) were inoculated directly into the gall-bladder, which had to be held tightly for some time by a piece of gauze between the fingers to prevent leakage after the syringe was withdrawn. At the autopsy, eight weeks later, three small millet-seed concretions were found adherent to the mucosa of an inflamed thickened and distended gall-bladder.

The second case (Rabbit IX of our series) is as follows:

March 17, 1898. Inoculation of 1 cc. of 24-hour bouillion culture of *Bac. typhosus* into ear vein.

March 19. Laparotomy. No evidence of inflammation. Cultures and cover-slips from gall-bladder and duodenum were negative for micro-organisms. Considerable traumatism of gall-bladder.

March 21. Second inoculation of 1 cc. of 18-hour culture of *Bac. typhosus* into ear vein. Animal quite ill subsequently, but recovered.

June 13. Widal reaction positive. Laparotomy. Marked evidence of cholecystitis. Gall-bladder bound up by adhesions in lappets of liver and identified with difficulty. One cc. of pale bile, aspirated from gall-bladder. Stained preparations showed a few rod-shaped organisms. Culture—*Bac. typhosus.*

June 14. Animal found dead. Autopsy. Peritonitis. Serosa greatly bile-stained. Gall-bladder thickened, congested and densely adherent to liver. Contents: Small amount of pale mucoid material, and three gall-stones. The largest is dark-colored, somewhat irregular in shape, measuring 3 mm. in its longest diameter.

Decomposition had set in and bacterial observations were not made.

Possibly such a concretion may be regarded merely as a precipitation and not a true crystallization though it possesses the characteristics of a young biliary calculus having a marked cholesterin covering. The stone depicted by Richardson and the early calculi described by Gilbert and Fournier were evidently of this character. The concretions were regarded as stones in the primary stages of development. Their chief constituents are bile pigments combined with calcium. These bilirubin calcium concretions are less commonly found in the human gall-bladder where stones

ordinarily contain a large predominance of cholesterin. Chittenden says that bovine gall-stones possess this same characteristic and are often pure-pigment calculi, sometimes wholly without cholesterin.

Although Galippe, as early as 1886, advanced the theory of a microbic origin of lithiasis in general, the chief credit of the demonstration of the infectious nature of cholelithiasis belongs to Gilbert. The results of his observations, begun in 1890, were utilized by Naunyn at the Wiesbaden Congress in 1891, when he advanced his hypothesis on biliary infections. Since that time Gilbert, and his collaborators, Girode, Dominici, Claude and Fournier, have continued to publish the progress of their interesting and valuable investigations on the relation of infectious processes to diseases of biliary apparatus.

Experimental attempts to produce calculi of infectious origin were for a long time unavailing. In 1893 they first noted the presence of "*petites concrétions verdâtres*" which had formed during a typhoidal cholecystitis in a rabbit. Following this discovery, methodical attempts were made for a number of years to obtain more perfect and undoubted concretions. On January 29, 1897, these efforts were rewarded by the formation of a definite stone obtained from the gall-bladder of a dog previously inoculated with the *Bacillus cŏli communis.*

Gilbert and Fournier, however, failed to announce their results until after Mignot, who had entered the same field of work, had presented to the Societé de Chirurgie, on the 19th of May, 1897, three small experimental calculi formed in a guinea-pig by *Bacillus coli.* It was generally believed that the bacillus of Escherich played the most important part in these infections. Interest in typhoidal cholecystitis, however, led Gilbert to experiment with Eberth's bacillus and on October 30, 1897, he with Fournier, profiting by Mignot's idea of attenuation, reported the production of biliary calculi in a rabbit resultant to an infection with *B. Typhosus.*

These calculi were regarded as stones in the primary stage of their development and from the description they must have resembled closely those produced by Richardson and those shown to this society. The gall-stones, however, which Mignot suceeeded in producing experimentally were said by Hartmann and acknowledged by Gilbert to have been identical in appearance with those commonly seen in human gall-bladders. These calculi were presumably five or six months old.

Various experimenters have adopted different methods in their attempts to produce infectious cholelithiasis. Endeavors to modify the composition of the bile and to alter the mucosa of the gall-bladder and to produce in divers ways a biliary stasis have equally been unrewarded.

The mere introduction of virulent micro-organisms alone as well as the introduction of aseptic foreign bodies without micro-organisms have similarly been unsuccessful. Mignot claimed that one of the two conditions essential to the formation of calculi was the extreme attenuation in virulence of the microbe employed, and regarded the degree of virulence of the organism as more important than the species. Adopting this poinciple, Gilbert and Fournier, by inoculating cultures of colon or typhoid, previously attenuated by heat, directly into the gall-bladder, were rewarded by finding some months later definite calculi, from the centres of which they recovered the original organisms.

This preliminary attenuation of the infective agent which Mignot has found essential to the proce-s may possibly, under certain conditions, take place in the body and be analogous to the agglutination of the organisms which takes place in the gall-bladder; the clumps, according to Richardson's hypothesis, forming the primary nidus of deposition for the biliary salts and pigments. In his attempt to form stones on this principle he inoculated an agglutinated culture of *Bacillus typhosus* directly into the gall-bladder of a rabbit and was successful on one occasion in producing a fair calculus.

Mignot, however, claims that to produce true stratified calculi five or six months are requisite, and that a second condition, as important as the attenuation of the micro-organisms, is necessary, namely the prevention of the prematnre expulsion of the soft concretions. This he accomplished in various ways. In his most recent article two especially characteristic cases are described.

In one of them the gall-bladder was tamponed in the presence of colon bacilli for one month. At the end of that time the tampon was removed and the gall-bladder closed. Fourteen months later, ¾ faceted stones were found occupying the gall-bladder which presented the anatomical picture characteristic of old gall-stone cases.

In another case two gall-stones were made to form about a thread which was fastened into the wall of a gall-bladder previously inoculated with attenuated colon bacilli. Dr. John Homans has reported a clinical experience similar to this experimentrl one in which at a second operation for cholelithiasis, gall-stones were found to have formed about the threads used at the primary operation in suturing the gall-bladder to the abdominal wall. There is no accompanying bacteriological note, unfortunately. These were large cholesterin stones such as Mignot has succeeded in producing and were found twenty months after the primary operation.

Mignot believes that the process of stone-formation and increment in the size of stones ceases with the death of the micro-organisms. Stones found in the gall-bladder are presumably on most occasions all of the same age, and always possess the same appearance, chemical composition and bacteriological characteristics. The original condition favorable to their formation, therefore, seems to be a transitory one. Old calculi are usually sterile, though their nuclei may contain the faintly-staining shadow of bacilli. Recently formed stones contain micro-organisms. Mignot further believes that if stones in process of development are removed the chances are in favor of a new formation. This is an argument against the so-called "ideal" operation and justifies the clinical experience of most surgeons that it is preferable to drain the gall-bladder in recent cases till one is practically sure of the asceptic condition of the bile and convinced that the ducts are sufficiently patent to allow of the free escape of the contents of the gall-bladder. It is suprising that one does not more often encounter secondary formations of gall-stones after preliminary operations, when we consider that the combination of traumatism and necessarily-retained micro-organism is present, a combination most favorable for the experimental production of stones.—*Johns Hopkins Bulletin.*

THE BACILLUS DIPHTHERIAE IN MILK.

BY J. W. H. EYRE, M.D., D.P.H.,

Bacteriologist to Charing Cross Hospital, and Lecturer on Bacteriology in the Medical School; "Ernest Hart" Memorial Research Scholar.

History of Prevalence.

In local epidemics of diphtheria the *prima facie* evidence has frequently implicated the milk supply as the vehicle engaged in the dissemination of the disease, but as in the case of waterborne enterica, the difficulties attending the investigation are so great, and the action of the original contamination usually so transitory, that the specific organism of the disease has but rarely been isolated from the fluid medium conveying it. In fact, with the exception of that recorded by Bowhill in the *Veterinary Record*, I am not aware of any sufficiently authenticated instance; and although I have several times been called upon to examine samples of milk suspected of containing the Klebs-Loeffler bacillus, it was not until February of this year that the investigation of such a sample yielded a positive result.

During the latter months of 1898 and the beginning of 1899, a number of cases of diphtheria had occurred among the inmates of a large school, and in the course of an inquiry as to the channel by which the disease had gained access to the school, I received a sample of the milk supply for bacteriological examination.

As far as I can gather, the method of collecting the sample was as follows. The cans containing the day's supply were brought to the school at about 11 a.m. on Sunday, February 2nd, 1899, and were unloaded from the cart and deposited in the kitchen of the institution. Here the sample of milk was removed from the can by means of a small jug, previously sterilised by boiling for ten minutes, and filled into two sterile half-litre bottles. (The sterile bottles were obtained from the bacteriological laboratory of Guy's Hospital.) The bottles were securely stoppered, and sealed down, and at once conveyed to me, reaching the laboratory at 12.30 p.m., when the examination was immediately commenced.

Analysis.

After agitating each bottle in order to ensure a thorough and even admixture of its contents, and well flaming the projecting portion of the stopper, and then the neck, 50 c.cm. of the milk were withdrawn by means of a sterile pipette, added together in a sterile flask, and labelled "Mixed milk."

Plates poured from this mixture gave an approximate enumeration of 10,960 organisms per cubic centimetre, and included such organisms as staphylococcus aureus, staphylococcus albus, sarcina lutea, bacillus mesentericus vulgatus, B. fluorescens liquefaciens, torula alba, etc.

The "mixed milk" was now filled into twelve small sterile tubes, labelled A to K, and centrifugalised for about ten minutes, the machine, one of the Dairy Company's centrifugalisers, running at some 2,000 revolutions per minute. On removing the tubes from the centrifugaliser the milk in each was seen to have separated into three distinct layers. The uppermost, consisting of the cream, formed practically one-quarter of the column of fluid; below this came the separated milk; whilst the rounded portion of the lower extremity of the tube was filled with the sedimented deposit.

Microscopical Examination.

I. The Tube A was used for miscroscopical examination:

CREAM.—Coverslip film preparations made from the cream (which formed a firm mass, of about the consistency of butter, and necessitated the use of a very stout platinum spatula to remove it), and stained with a view to the demonstration of bacteria, showed a fair number of micro-organisms—both bacilli and cocci—also a very few leucocytes. No bacilli were observed which would resist discolorising with 25 per cent. solution of sulphuric acid.

SEPARATED MILK.—No micro-organisms could be detected in this fluid.

CENTRIFUGALISED DEPOSIT.—As in the cream, both bacilli and cocci were noted in the films prepared from the deposit, but in much fewer numbers. Leucocytes were present in numbers decidedly in excess over those found in the deposit from healthy "one-cow" milk similarly treated, also some epithelial cells and granular *debris*.

Cultivation.

II. Portions of the cream from five of the tubes, lettered B to F were used to inoculate tubes of inspissated blood serum in the following manner.

Tube B.—A stout platinum loop, after sterilising in the Bunsen flame, was thrust into the semisolid mass of cream, withdrawn, and the material retained in the loop planted on surface of a blood serum tube (1).

From Tube C.—A similar quantity of cream was used to inoculate "consecutively" the surface of two serum tubes (2 and 3). (By "consecutively" is meant the inoculation of tubes of media in series, that is, without sterilising the loop or adding more material between its withdrawal from the first tube and its introduction into the next."

From Tube D.—A loopful of cream was used to inoculate consecutively three serum tubes (4, 5, 6).

From Tube E.—One loopful of cream was used to inoculate four serum tubes consecutively (7, 8, 9, 10).

From Tube F.—One loopful of cream was used to inoculate five serum tubes consecutively (11, 12, 13, 14, 15).

III.—The centrifugalised deposit from tubes lettered G to K was used to plant fifteen more blood-serum tubes, and in order to minimise the risk of diluting the deposit and to render it more easily get-at-able, the greater part of the cream was removed from each tube in the form of a cylinder, by means of a small sterilised cork-borer. Through the orifice thus made a sterilised pipette was introduced and the separated milk pipetted off. After the removal of the pipette the platinum loop was easily passed into the tube, and a portion of the deposit taken up.

From Tube G.—One loopful of the sediment thus obtained was used to inoculate consecutively five blood-serum tubes (16, 17, 18, 19, 20).

From Tube H.—One loopful of the sediment thus obtained was used to inoculate consecutively four blood-serum tubes (21, 22, 23, 24).

From Tube I.—One loopful of the sediment thus obtained was used to inoculate consecutively three blood-serum tubes (25, 26, 27).

From Tube J.—One loopful of the sediment thus obtained was used to inoculate consecutively two blood-serum tubes (28, 29).

From Tube K.—One loopful of the sediment thus obtained was used to inoculate one blood-serum tube (30).

The entire batch of thirty tubes were then placed in the incubator regulated at 37-5°C., and examined at the end of twenty hours, when a growth was found to have occurred in every one of the tubes.

Naked Eye Examination.—The growth in each of the tubes consisted of minute colonies much too closely aggregated to allow of the characteristic development of any one of them, and in all the tubes with the exception of 15 (which appeared to contain a pure culture) a very mixed growth was present, including several chromogenic organisms.

Microscopical Examination.—As it appeared well-nigh hopeless to search for individual colonies resembling the B. diphtheriæ, coverslip film preparations were made from a surface scraping of the growth in each of the thirty tubes, care, however, being taken to avoid touching with the spatula any such colonies or masses of colonies as were obviously not composed of the B. diphtheriæ. All the films were stained with well-matured carbolic methylene blue, and carefully examined with a $\frac{1}{12}$ inch oil-immersion lens. This microscopical examination resulted in the discovery that bacilli morphologically resembling the B. diphtheriæ were present in no fewer than fourteen of the tubes (namely, Nos. 1, 2, 4, 6, 10, 12, 13, 14, 15, 16, 21, 22, 24 and 30). The bacilli represented two well-defined types, the one the typical segmented and clubbed form known as the Klebs-Loeffler bacillus, the other the type described by Peters as the "short pathogenic," but which is more happily termed the "sheath" bacillus.

The two varieties were present in practically equal proportions, the segmented form predominating in eight of the tubes, whilst in the remaining six the sheath variety was the prevailing type.

Now, on comparing the numbers of the tubes containing these suspicious bacilli with the list of preliminary inoculations given above it will be

seen that whilst every loopful of the centrifugalised "cream" contained these (?) diphtheria bacilli, only three out of the five loopfuls of the centrifugalised deposit appeared to do so; and this result one expected from the ratio existing between the number of organisms present in the coverslip films made directly from the centrifugalised "cream" and "deposit" respectively.

Isolation.

The next step was to isolate one of each of the two types present in the milk, to study their morphology and biology and to compare them with a known pathogenic B diphtheriæ, obtained from a diphtherial throat, as a control.

The sheath variety was easily isolated from Tube 15, which was almost a pure culture to start with. This was labelled "△15." The segmented variety (from Tube 30) gave considerably more trouble and required "consecutive" planting upon twelve blood serum tubes before it could be obtained in state of purity. This bacillus was labelled "△30."

Staining Reaction.

Both types stained equally well with the aniline dyes and also by Gram's method. The distinction between the segmented form "△30" and the sheath variety "△15" was extremely well marked in 18 to 20-hour blood serum cultivations when carbolic methylene blue was the stain used, but upon staining coverslip preparations by the method suggested by Neisser—the so-called diagnostic stain—the two were indistinguishable, each showing two dark polar granules and in a few isolated cases a third central one. Every trace of the sheath with its tapering extremities disappeared under these conditions from "△15" and it now presented the appearance of a regular rod of the same size, shape, and coloring as the control B. diphtheriæ.

Cultural Characters.

Both "△15" and "△30," after isolation from the milk, were planted upon various media, and carefully compared with cultivations, made under identical conditions, of the control B. diphtheriæ. The media used in each case were: bouillon, glucose bouillon, agar, glycerine agar, inspissated blood serum, gelatine, litmus milk, litmus whey, and potato. Without describing in detail the various cultural appearances, which to the naked eye were those typical of the B. diphtheriæ, it will suffice to say that they were identical in all three sets of cultures, and the acid production at the end of 36 and 48 hours was equal.

Pathogenesis.

Each of the two varieties was fully tested by inoculation experiments, and the following extracts from my note-book yield conclusive evidence not only on the point of pathogenicity, but also as to identity, with the B. diphtheriæ.

Guinea-pig 3.—Weight, 220 grams. Received 2 milligrammes of a 48-hour blood serum culture of "△ 30" (emulsified with 0.5 c.cm. of sterile broth) under the skin of the abdomen. Result: Death in forty-eight hours.

Post-mortem Examination.—The subcutaneous tissues at the seat of inoculation was occupied by a spreading gelatinous exudation. The peritoneal and pleural cavities contained a large quantity of clear serous effusion. The kidneys and adrenals were hæmorrhagic. The organism was recovered in pure culture from the seat of inoculation and also from the peritoneal effusion.

Guinea-pig 4.—Weight, 400 grams. Received 1 c.cm. of a 48-hour glucose-broth culture of "△ 15" under the skin of the abdomen. Result: Death in rather less than sixty hours.

Post-mortem Examination.—As in Guinea-pig 3, except that the organism was recovered from the seat of inoculation only.

Guinea-pig 5.—Weight, 390 grams. Received a similar dose to Guinea-pig 4, and from the same culture. This was followed after a few minutes by the subcutaneous injection of 1 c.cm. of diphtheria antitoxin (B.I.P.M.) Result: Animal unaffected. Alive and well six weeks later.

Note and Reference.

Bowhill, Milk the Vehicle of Contagion in an outbreak of Diphtheria, *The Veterinary Record*, No. 561, April 8th, 1899. This latter bacillus when stained with a carbolic methylene-blue shows a distinct sheath of faintly-stained protoplasm tapering to a fine point at either extremity and enclosing one darkly-stained elongated lozenge-shaped aggregation of protoplasm about one-third of the length of the entire organism.

Discussion.

Dr. W. H. Symons (M.O.H. Bath) wished to know if Dr. Eyre traced the origin of the diphtheria bacillus in the milk to a human or a bovine source? The previous history of the milk was often sufficient to enable a medical officer of health to stop a milk supply. He would also like to know if Dr. Eyre had tried the effect of diluting the milk before centrifugalising. Bacilli had a specific gravity varying from 1035 to 1045, and floated indifferently in milk, urine, and other fluids of similar specific gravity. Dilution lessened the specific gravity of the fluid, and so allowed the organisms to be thrown to the bottom away from the fat.

Dr. Eyre, in reply to the President, said that no other organism but the diphtheria bacillus would produce in the guinea-pig the same conjunction of spreading gelatinous exudation at the seat of inoculation; peritoneal, pleural, and pericardial effusions and hæmorrhage into the suprarenals. Therefore, if by introducing a cultivation of the organism which he had isolated from the milk into the subcutaneus tissues of a small guinea-pig he obtained a result conforming to these appearances, he considered his point was proved, and his diagnosis of the bacillus diphtheriæ was fully confirmed.—*B. M. J.*

CHRISTIAN SCIENCE "DEMONSTRATIONS."

[WITH COMMENTS BY DR. J. H. R.]

FROM CHRISTIAN SCIENCE JOURNAL FOR APRIL LAST.

1. Lady—Sunday morning, starting for Sunday school, fell on the stairs—leg doubled under her—people ran into the hall declaring "I was hurt." I immediately met the claim with a strong denial, declaring, "I am not hurt." I immediately rose, staggering a *little*, so I grasped the door to steady myself. I knew if I abided or stayed firm in my denial of error I need not fear. So I put down my foot bravely and started. Was very dizzy—had to put my hand on the fence. *I walked* to the *hall*, some distance—stood nearly all the time I was there, walked home and back again in the afternoon to our service, stood up through that, and walked home again. *I did not look at my leg.* Error screamed pretty loud that night, but the pain ceased in the morning, and after that *I had no more trouble with it.* . . . . *Several days after* I felt a protuberance just below the knee, I looked, and *behold, there were the two ends of the fractured bone pressing hard* against the skin, *as if trying to get through.* The swelling was soon gone.

Women Do Not Need Legs for Locomotion.

I realized then that *man is not dependent on a material organization for anything, not even for locomotion;*" *i.e.*, she realized that she could eat without a mouth, and walk without legs. Legs must be for *ornament —not for use.*

Bible Superseded by C. S.

2. "Three years ago I was trying to find out rest and peace. I would read *my Bible and wonder what it all meant.*" She got "Science and Health," read it every day and her troubles left her.

Moral—Throw away your Bible and read "Sc. and H."

Boy's Finger Jammed and was not Hurt.

3. A little boy had his finger jammed by the lid of a trunk—screamed —his mother took the hand in hers. "By the time we had crossed the room he had ceased crying. In ten minutes there was *only a mark like a pin scratch* across the back of the hand."

What a miraculous "demonstration"!

Boy Thrown off Velocipede and was not Hurt.

4. Same boy—fell off his velocipede, striking his head on the sidewalk —could not open his eyes for the pain. "A few minutes' reading of the 'Truth Book' put him to sleep. He awoke in half an hour, still in pain, threw up, went quietly to sleep. Woke up next morning *without a mark* on either face or head."

Of course nothing like this ever happened to a child whose parents did not believe in Ch. Sc.

Sciatica Lasted Three Months and then Disappeared.

5. A woman, attacked in *June* by sciatica, "was treated by one of Mrs. Eddy's loyal students, *through June and July*, not in August. "September came, I thought I was worse. She gave me *one treatment*, and I have been a well woman ever since."

Who ever heard of a case of sciatica lasting three months and then disappearing, except under Ch. Sc. treatment?

"Ch. Sc. Understanding" Does not Prevent Them Living in Alaska or California.

6. "I was in Alaska in Feb., 1889, and Southern California in August, and felt no bad results from extreme heat or cold; thus proving to me that one can be healthy in all climates, with the understanding of Ch. Sc."

What a consoling fact! one need not fear to live in either Alaska or California, even if he understood Ch. Sc.

26 Ailments Relieved by Ch. Sc.

7. Case of eczema—Clifton Springs for several successive seasons—treatment gave relief, but the disease was sure to return next summer. I took Ch. Sc. treatment. "I counted up *twenty-six* different troubles, ills, habits, etc, of which I had been cured. All my troubles have dropped away *but one*, and that I hope to get the better of in time."

Query. What was the one? Was it the eczema?

Dose of Ch. Sc. Makes a Cross Dog Become Good.

8. "One of the boys of our S. S. who had been desirous of a newspaper route had a chance for one, *but there was a dog* on the route which was very ferocious; three boys had been bitten by him. He thought he would try it. When he told his parents what he was going to do they asked him how he was going to meet it. He said, '*I will just give that dog a dose of Ch. Sc.*' He started on his round, the dog came bounding out, barking loudly at him. He spoke to the dog—dog came and lay down at his feet. Then he said, 'Brownie, take this paper around to the back door for me.' Brownie did so, and has done it every morning since."

Mrs. Eddy cures boils with a "*high attenuation of Truth*," was that the "dose" the boy cured the dog with?

Clothes Caught Fire—Woman was not Burnt.

9. Girl—clothes caught fire—girl rubbed her hand over them—fire was extinguished: "My brother said, 'it is a wonder you did not burn up.'"

What a miracle!

FROM CHRISTIAN SCIENCE JOURNAL FOR MAY.

10. "Being busy in the household a portion of the boiling water came over on my hand. The pain was fearful, but then I turned to my dearly beloved science, and the pain ceased. The next morning I found that *no blister had appeared.*"

Boiling Water did not Scald, However.

Then it was evident that the scald was a *very* trifling one. Of course such a thing could not have happened to any one but a Ch. Scientist.

Horse Treated by Ch. Sc.

11. Man's *horse* got sick about 5 p.m.—he had not time to go to see him untill after his chores. "When I arrived the horse was so weak that he could not raise his head up. His ears were cold and he *seemed* to have a high fever. *I treated him about one minute*: all at once the horse got up without effort and began to eat.

Query. *How* did he treat the horse? as he would a man? *i.e.*, sit down, look at the horse, relieve its *fear*, argue with it *silently*, and so get the horse's "corporeal senses to respond 'so be it'?"

SC. AND H., P. 410.

Men Turned from Evil Purposes by Ch. Sc.

12. Lady stenographer relates: "Seven men called on me to do some work for them. It soon became evident that they intended to defraud one man. Realizing that God, Good is All—there is no place for dishonesty, *I continued to work*, and presently one man stood up and said, 'it is not right, I cannot do it.' The other men seemed only too glad to be convinced, and soon the matter was settled honestly and fairly."

Query. Did no man's conscience ever cause him to give up evil intentions before?

"No place for dishonesty!" are not some men dishonest?

Sight of a Spoon Cures Defective Eyesight.

13. "I wish to tell of a demonstration with *the souvenir spoon*, while a lady was calling on me one evening. She had not *seen the spoon before*, and while examining it, *asked me to read the motto upon it*, as she had left her glasses at home, *and could not possibly see it without them.* I said, 'you can read it, now try.' Finally she did so, and said it was wonderful that she had been able to do so."

So the sight of one of "Mary Baker Eddy souvenir spoons" restored the lady's eyesight.

Buy, oh, buy one of these miracle working spoons —$3 silver, $5 gold plated. Then you will be restored to eyesight, and be able to walk, even if you have no legs.

FROM CHRISTIAN SCIENCE JOURNAL, JUNE.

14. Old woman—"healed of malignant cancer of the face—there *was not* even a disfiguring scar left." "One thing she feels quite sure of, that is, that *people oppose Ch. Sc. because a woman discovered it.*"

Good for the old lady. Women seem to be at a discount in her section.

Ch. Sc. Enabled a little girl to get her lesson.

15. Little—girl—at school—lesson very difficult. "I tried to realize that nothing was too hard *for the divine mind.* In consequence I *was the only one* which had a perfect lesson."

The only deduction I can make from this is, the little girl's mind was "the divine mind.."

Of course no little girl who was not a Ch. Scientist ever before learned a hard lesson perfectly.

Hen Hurt—Christian Science Heals it.

"I wish to tell of a demonstration I had with *my pet hen.* One day she got stepped on. Mamma *thought* she was dead, and told me to throw it away. But I sat down on the doorstep and treated her the best I could, and she was soon as lively as ever."

I can crow over this.

A friend of mine in the country had an old rooster which was frozen still and lay all day under the kitchen table, and he was cocksure that it was dead, and had it buried in the dunghill, which was a foul bed, I admit, The next day the old cock was strutting about in as fine feather as ever.*

Moral. Dunghill science is more efficacious than Ch. Sc. in bringing chickens to life.

Ch. Sc. Boy Thrown off Wagon and was not Hurt.

13. "I am a little boy eight years old, and want to tell you about my demonstration. I was thrown from our wagon, falling on my head and shoulders. We *denied* it, and in about *an hour* I was all right."

Of course none but Christian Science boys ever fall out of a wagon without being hurt.

CHRISTIAN SCIENCE JOURNAL, MARCH, '99.

Eczema Lasted Three Years and Then Got Well.

14. Woman—had eczema—"tried many doctors, expending hundreds of dollars and receiving no benefit." Then she tried Ch. Sc. "I procured the Quarterly, and almost all Mrs. Eddy's works, and with them *and my Bible* and journals I learned much. *This state of things continued for more than a year and then* the eczema, with many other chains, *began* to leave. I had weak eyes, rheumatism of the hip, kidney troubles, and other minor diseases. About two years before I broke my arm, and up to coming into Science I had been of little use.

*Fact (J. H. R.).

DIETING IN PREGNANCY.

BY BEDFORD FENWICK, M.D.
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We may often learn a great deal from a case which is, apparently, of the most simple nature. This patient, at first sight, seems to be suffering from ruptured perineum, and nothing more. It is a bad case, certainly, because, as you see, the rupture has extended not only through the sphincter ani, but also for more than half an inch through the anterior rectal wall. The history which she gives is, also on the face of it, not uncommon as explanatory of this condition. She is 29 years of age, and has had three children. Each labour was prolonged and instrumental, and each was evidently of a somewhat serious character, seeing that each child was born dead, and "two of them were cut away in pieces." At each confinement, apparently, there was some tearing of the perineum, and this was, evidently, greatest at the last labour, four months ago. The reason for her suffering is also obvious, because there is marked contraction of the pelvic outlet, so that a considerable degree of dystocia might have been anticipated. Our duty, therefore, in this case will not end with relieving her present symptoms, the chief of which are ascribed to the rectal condition It will not end, in this case, as in many others, with the performance of a plastic operation, so as to repair the tear through the rectal wall and thus restore the proper action of the rectum. Incidentally, I would like to impress upon you the practical fact that, in a woman of this social condition and this age, it would be useless, and, therefore, unwise, to attempt to completely restore the perineal body. The new tissue would, inevitably, be torn through again at her next confinement, next year, and the tear might then extend into the rectum again; whereas by merely repairing the rectal injury, the distressing symptoms, due to complete loss of control over the passage of fæces and flatus, would be removed, and the vaginal orifice would be sufficiently patent, on the next occasion, to obviate, perhaps, any increased laceration. Amongst the working classes, it is wiser to defer the complete operation until the child-bearing age is past But in this case we have to go a step further. The patient, I find, is correct in believing that she is two month's pregnant, and so the practical question faces us whether we can, by any means, save her from the dangers in her next labour from which she has already suffered in the past? You will, perhaps, answer that, to some extent, this can be done by the premature induction of labour That is so, but, in private practice and in the higher ranks of society, it is often of the utmost importance that a healthy living child should be born. Let us, therefore, put to ourselves this further question: Is it possible to enable this patient to have a living child?

It is only within the last few years that this question could have been answered, with any degree of assurance, in the affirmative; because, as

you are well aware, if the symphysis pubis be divided, or even if forceps only be needed, there is, nevertheless, some risk to the life of the infant.

The system to which I would earnestly ask your attention is, perhaps, quite novel to you, for it is certainly not generally known to the profession, and, I venture to think, you will all meet with patients to whom it will be of incalcuable advantage. We will admit this patient into the Hospital and repair the rectal wall, and will, at the same time, place her on a strictly regulated diet which she will be enjoined to follow to the last day of her pregnancy. If she does so, I may, with confidence, express an opinion that, at the forthcoming labour, the child will be smaller than any she has hitherto borne, but it will be, in every other respect, perfectly-formed and healthy. In other words, I hope we shall save her from a great deal of suffering and danger, and that we may save the life of the child also. To show you that this belief on my part is not over-sanguine I will give you a few brief facts. The principal of the system to which I allude, is very simple, and is based on well known physiological facts. You are, perhaps, aware that more than a century ago it was attempted, by means of frequent bleedings, and by a system of semi-starvation of the mother, to so reduce the size of the fœtus, that it might pass safely and be born alive, even through an extremely contracted pelvis; and, if so, you know that the system failed—as it deserved to fail; that in many instances the starved fœtus was born dead, while, in many cases, the mother also failed to survive the treatment to which she was subjected. It was recognized, in fact, that such a remedy was worse than the disease. So much discredit was thrown upon the attempt that it is only within the last few years that more rational and more scientific efforts have been made to influence the growth of the fœtus by strictly dieting the mother.

We have not yet, perhaps, arrived at a complete system, but we have, undoubtedly, made sufficient progress to be certain of greatly improved results.

Practically, then, the system to which I allude is based upon the exclusion from the diet, as far as possible, of starchy and saccharine foods and of the restriction of fluids. In other respects, but little change is made, and nitrogenous foods are given in moderation. The following is a fair example of the dietary which I have for some years, used with excellent results in private practice:—

For Breakfast.—A small teacupful of tea or coffee, an egg, and two slices of toast.

For Lunch.—Any kind of meat, game or fish, green vegetables, one slice of toast, or a dry biscuit, cheese, one wineglassful of wine, milk, or any other fluid, excepting malt liquors.

At Afternoon Tea.—A small teacupful of tea or coffee, with one slice of bread and butter, or cake.

For Dinner.—The same as for Luncheon.

The quantity of fluid to be taken during each day is, therefore, restricted to about 15 ounces, and some patients at first find it impossible

to satisfy their thirst with this quantity. The addition of a small quantity of lime-juice and effervescing water is sometimes useful, or the patient may be advised to suck thin slices of lemon, if the thirst is considerable.

The result of this dietary is that no superfluous fat is developed on the fœtus, and the bones, although firm, are undoubtedly more soft, and the bones of the head are, therefore, more easily moulded than is the case when the mother is taking an ordinary diet. As in the case to which I shall call your attention, the practical result of this system, in my experience, has been that women who had previously had extremely difficult labors, and who, in many instances, had never born a living child, have subsequently had comparatively easy times, and have had healthy living children at full term.

For example, a lady consulted me, some four years ago, who had a marked degree of pelvic contraction. At her first confinement, after she had been 48 hours in labour, it was found necessary to use the cephalotribe to remove the child; her second child, after equally prolonged suffering, was removed by forceps; the perineum and rectum being most severely ruptured. Cellulitis and septicæmia followed, and she was dangerously ill for about six months, remaining in a condition of invalidism for about five years afterwards. She then came under my care, her health gradually improved, and she again became pregnant. She was at once placed upon the restricted diet I have mentioned, and had a child at full term, perfectly healthy in all respects and borne alive, after a normal labour, terminated in about three hours, and without any instrumental assistance.

Another case which was interesting, from the point of heredity, was that of a lady, whose mother had had eight children, of whom the patient was the only one who survived, all the others having been stillborn, or having lived only a few hours after birth. The mother suffered from a very marked degree of pelvic contraction, and, so far as I was able to ascertain, the shortest time which any of her labours lasted was two days, and in every instance they were terminated by instrumental means. The patient had two aunts, on the mother's side, both of whom had only had stillborn children after most difficult and instrumental labours. The patient herself had been married four years and had had one child, delivered by instruments after a prolonged labour. The doctor who attended her on that occasion, was strongly of opinion that she "would never live through another confinement." When she, therefore, became pregnant again, I was consulted as to the advisability of premature labor being induced. I recommended that the dietary treatment should be tried instead, especially as there were family reasons which rendred it of considerable importance that she should have a healthy living son. She followed the dietary with scrupulous care, and in due time, was confined of a boy, the labour being so easy that the child was born before her doctor could arrive at the house. The child only weighed 6 lbs., but was perfectly well formed. It throve well, and is now a strong and healthy child.

It would be easy to give you many other cases, because for the last six or seven years I have invariably employed this method in the pregnancy of patients who had any degree of pelvic contraction, or other condition which caused dystocia. And I would, therefore, earnestly advise you to carry out the method in your own practices in similar cases. There is, so far as my experience goes, only one drawback to it, beyond the sensation of thirst, from which some patients suffer at first, and which, as I have already hinted, may be more or less readily alleviated.

But a pratical drawback, the reason for which I am unable to explain, but a condition which has happened so frequently that I feel compelled to associate it with the system in question, is that these patients exhibit a tendency to early rupture of the membranes; and thus the first stage of labour seems to be more tedious and painful than it would be if the membranes remained intact, and the hydraulic influence of the amniotic fluid were available for the dilatation of the cervix. It is a fact which is of some practical importance that the quantity of fluid in the uterus in these cases is much less than normal. In other words, the abdomen is less distended than usual, and, therefore, the abdominal muscles are better able to exert their influence during labour—a mechanical fact of much importance. But this diminution in the secretion of fluid may be the cause of the unusual thinning of the wall of the membranes. I usually advise that, during the last week of pregnancy in these cases—that is to say, as soon as the uterus begins to fall in the pelvis—the patient should not leave the house, but should rest as much as possible on the couch during the day, so as to avoid any strain or over-exertion which might precipitate the rupture of the membranes.

Prevention, we all acknowledge, is a hundred times better than cure, and I feel confident that if you will strictly carry out this system of dietary in the patients who have any tendency to difficult labours, or in primapara who have any pelvic contraction, you will save them much suffering and danger; and many infants will be born with or without the assistance of forceps, whom it would be otherwise difficult, or, perhaps, impossible to save.

I hope, therefore, that the case now before us will, in due time, illustrate the manner in which Nature can be assisted, and in which this special danger of pregnancy and parturition can be obviated without the employment of the heroic measures formerly recommended, and merely by a system so simple, and so common-sensible, that it will recommend itself to your patients, while its success and usefulness will amply repay you for any trouble you may take to secure its due observance in suitable cases.—*Medical Times and Gazette.*

FRACTURE OF THE PATELLA.

For a bone of its size the patella certainly gets its share of discussion When it is fractured, the outcome of whatever method of treatment that is employed is to some extent doubtful, and bad results are not easily overlooked by the patient or his friends. The non-operative treatment seems already to have been placed in its proper niche, but the different aspects of the operative treatment of the condition continue to excite discussion of varying degrees of acuteness. We are speaking only of cases seen within seven or eight days from the time of the injury. The operative treatment of the typical case of fracture of the patella may be divided into two classes: first, treatment by those methods which aim to interfere with the joint as little as possible; and second, the method of free opening and cleansing of the joint with salt solution previous to suture of the fragments. Advocates of the first plan claim simplicity, safety and convenience for the methods they employ, and say that in case of infection the results of their methods are not so disastrous as when the same accident occurs after free opening of the joint. We should, for the purpose of discussing this question from the theoretical point of view, be able to disregard the occurrence of infection. Infection ought never to occur when a simple fracture of the patella is operated upon, and what we ought to think about most is the final result and the means which lead towards perfection in that particular. All the methods of working through a small skin incision leave much to be desired in mere operative detail. We are always working more or less in the dark. We cannot be sure of the condition of the interior of the joint, the exact contour of the fragments or the disposition of shreds of periosteum and synovial membrane, and by most of the methods we are introducing a long thread of foreign material, with a very distinct fluid-conducting power if it is silk, a long distance under the skin, very close to an important serous cavity. The objection urged against more extensive operative work is always against this very extensiveness and the opportunities for infection which may thus be afforded to the elusive bacteria. But, as we have said, infection should not occur, and the corollary of this statement is that only those accustomed to performing all kinds of surgical operations should undertake this particular one. The question of suture material is of great importance, and several materials have been recommended. Here, as elsewhere in the body, an absorbable suture is much the most desirable if there are no mechanical objections to its use. It has long seemed to be the idea of many surgeons that the fragments of a fractured patella were subjected to a great deal of tension, and consequently that suture material must have considerable strength and permanence in order to be useful. The result of this reasoning showed itself in the use of silver wire and thick silk in operations upon the fractured patella. There are, however, several very serious objections to the use of silver wire, which also hold good in the case of silk, but to a lesser degree.

Great tension is not needed to hold the fragments in position after the operation we are considering; in fact, great tension is almost as injurious in bone as it is in soft tissues. The wire is non-absorbable, and is thus sure to cause irritation and perhaps necrosis if left any length of time, not in every case, but in a proportion large enough to be very noticeable. The function of the suture in fracture of the patella is to hold the fragments in apposition long enough for the rigid dressing or splint to be put in place, and to continue acting long enough for the danger of spasmodic or convulsive movements of the muscles to pass off. The importance of the correct application of the dressing is exceedingly great. We do not put silver wire sutures into a torn or cut quadriceps tendon, and we do not use them in the patella. Reasonably strong, and above all things, sterile catgut answers all purposes, and it need not be subjected to any special hardening process. If we are going to perform the extensive operation upon a fractured patella, we cannot do better than suture the fragments with catgut through drill holes not involving the articular surface of the bone, and use extreme care in using the plaster of Paris dressing. The joint ought to be washed out with a hot decinormal salt solution to remove the clots.

Recently a compromise operation has been suggested, and excellent results are reported. This operation is done through a transverse incision and the fragments are tilted up by means of sharp retractors, so as to allow the joint to be washed out as much as possible without having the fingers touch any part of its interior. The suturing is done with catgut, and includes only the periosteum. We may be certain that success in suturing the patella will depend upon two things—asepsis and suture material.

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EDITORIAL.

There is no doubt that sanitary progress owes much to Germany. The Imperial Office of Health of Berlin has not only sought actively the existence of problems connected with infection, but has never hesitated to conduct, regardless of expense, mature experiments, the better to combat the evil. The bacteriological laboratory of Berlin has indeed no equal in points of completeness of fitting up and all-round efficiency. In fact, all similar institutions throughout Germany are alike in this respect. Since 1890 the question has been duly examined "Whether railway carriages as well as railway stations were not active centres for the propagation of tuberculosis?" Since Cornet's experiments, confirming that the dust deposited on the walls and upholstery of an apartment occupied by a consumptive patient, contained the phthisical bacillus, and in its violent form, there was nothing improbable in suspecting that the same seed germs could as well exist in railway carriages, above all in sleeping cars, chiefly occupied as a rule by wealthy consumptive passengers. There was no practical attention given to this important subject until Germany took up the question and M. Prausnitz demonstrated the presence of the virulent tuberculous bacillus in the ordinary railway carriages. It was then decided to prove the presence of the bacilli, to what an extent they actually existed, as well as devise the best means to secure the disinfection of the said vehicles. Sterilized sponges gathered up the dust

in such parts of the waggon where it had most accumulated. Guinea pigs were accordingly inoculated with some of this dust, with the result that tuberculosis soon appeared. The tests were extended to 45 compartments belonging to the four classes of vehicles. Next 117 animals were further inoculated also with the collected dust, three at once became infected. It was the dust taken from one of the sleeping carriages that communicated the infection, notwithstanding that the vehicles had every appearance of cleanliness. The strangest fact is, that out of the 117 animals inoculated for the special experiment, 45 succumbed to other contagious maladies which were contracted apart from the three deaths from actual tuberculosis. Hence, it was unquestionably the dust emanating from the dried phthisical expectorations collected from the floors of the carriages that communicated the maladies.

Still, it was further necessary to place the matter beyond any possible doubt. In order to do this, sixteen trains representing 383 carriage compartments and arriving at the termini in Berlin, were specially examined by medical authorities, who could not only distinguish between old and fresh expectorations, but were also able to discover and trace at a glance whether such expectorations emanated from consumptive individuals or not. The expectorations were taken from among 31 compartments of the four classes of vehicles, and served to inoculate 91 animals; of the latter 28 succumbed from the special virus contagion contained in the inoculated matters. The remaining animals were killed after six weeks; all were found to be in a healthy condition, except three that had really contracted tuberculosis from the original source. No less than seven different species of bacilli were discovered in the expectorations taken from the 383 compartments. But the number of disease germs was always considerable in all the four classes of carriages. In the first-class for instance, upon a surface of one hundred square centimetres no fewer than 2,583 were revealed, while in the fourth class the total found was 12,624, grading up to the first-class. The floor was precisely the part of the vehicle which proved the most infected, while the ceiling had fewest bacilli. It was not indeed an easy matter to cleanse a whole waggon; but three were found in a very filthy state owing to age, and consequently very contaminated, owing to the fact that the bacteria had been and were artificially introduced. The waggons in question were not only infected with the specially cultivated bacteria therein placed, but also by an enormous quantity of other parasitical germs, which seemed natural to the vehicles despite their apparently orderly look. The disinfecting process consisted of water, soap and carbolic acid,

applied by means of special instruments. It did not destroy the bacteria, it only lessened or retarded their development. Some of the cushions and linings were disinfected at the Municipal establishment. After the operation no disease germ existed, nor were the cushions injured. The compartments *per se* were next disinfected with soap and water and five per cent. of carbolic acid, the process did not kill off the bacteria.

The expense incurred in disinfecting the four classes of carriages varied from 62 to 69 francs per carriage—the former was the fourth class, the latter for the first. The floor of the carriage was measured, and in certain spots the sponges sucked up the soiled matters. The floor was then washed with soap and water; in the case of the third and fourth class cars micro-organisms were found, but in fewer quantities; however, after a short interval, they became very plentiful. It was found that the solution having 10 per cent. of soap deteriorated the wood-work painting; solutions 50 and 75 per cent. weaker were therefore employed by preference; the latter got rid of the bacilli, but only for a short time, the strong solution was the best. Before the washing commenced 5,508 parasites were collected within a 100 square centimetres on the wooden seat, after the operation only 35 were discovered. The wash employed to disinfect the railway cars ordinarily consists of a solution of soap and water of one per cent. strength; it is laid on nooks and put into crannies by means of an ordinary paint brush, then after washed off by the nozzle of a syringe, the places are next rubbed dry with sterilized linen or chamois leather. That disinfects very well and reduces the bacilli considerably. These remarks apply to third and fourth class vehicles. It is not at all easy to disinfect first and second class carriages, bacteria have been found on the cushions and in the braidings, but the real source of polution is invariably the floor. The latter in the first class carriages is covered over with a movable carpet, which is "supposed" to be shaken and brushed after the termination of each journey. The floor of second class carriages is covered over with a fixed linoleum, which is swept sometime in the day; however, the expectorations in the sweepings being dried up, the probabilities of contagion are all the more dangerous. Over a space of 25 square centimetres of carpet in a first class carriage, no fewer than 46,800 bacteria were found; this number was reduced to 997 after the said carpet had been shaken and brushed.

The outcome of all these several experiments was to secure the daily washing of the floor of railway stations and their walls, equal to the height of a man, and to the placing of spittoons in all waiting rooms. A series of special regulations were drawn up accordingly—and which have

been strictly acted on in Germany since 1st April, 1898—respecting the total or partial cleaning of the carriages, their upholstery, etc. Special places are set apart where disinfecting operations can be carried on effectively. In the case of railway lavatories, a solution of quick-lime answers well, while a piece of soap is placed in the pan of the closets; this common sense practice averts bad smells. The spittoons, which are of a special shape, are emptied each day, and thoroughly flushed. When quick-lime is required, take 1¾ pints of pure quick-lime, reduce the latter to small lumps, and add 4 litres (1 litre equals 1¾ pints) of water; keep the mixture ever well covered up.

How to Remove Plaster of Paris Bandages.

I have noticed, while in England, that general practitioners appear to shun, to a great extent, the use of the "Plaister of Paris" splints for immobilizations, on account of its being so difficult of removal. Therefore, most prefer the starch bandages, etc., although it is generally acknowledged that the Plaister of Paris is much the best appliance. But with the method which I will mention, the Plaister of Paris is the easiest to remove. It is simply this: Soak some cotton wool in *Peroxide of Hydrogen*, then moisten the splint down its full length with this, for about half-inch wide. When it is thoroughly soaked you will find the plaster is in the same condition as when first put on, and all you have to do is to cut the bandages with a pair of scissors, without any injury to the patient or any trouble whatever. I mentioned this tip at the London Hospital, and I believe they use it altogether now. I saw it done in the States, and I hope this will be interesting as well as useful to your readers.

Contribution to the Knowledge of the Metabolism after Removal of the Ovaries.

The investigations so far published about the phosphoric acid metabolism in osteo-malacic women before and after castration gave by no means uniform results. Curatulo and Tarulli* found in dogs after castration a considerable and permanent decrease of the phosphoric acid secretion in the urine. O. Falk controlled these experiments in two dogs. The animals were fed on horse-meat and pork-fat; the P_2O_5 secretion was determined in the urine (in one dog in feces and urine). The results of his experiments do not convince the author that the castration of female animals has any influence on the phosphorus metabolism. He sees a source of error in the fact that the animals of the Italian observers have been fed on bread, and concludes that the beneficial influence of castration on osteo-malacic women can not be explained by experiments on healthy animals

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ANAESTHETICS.

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I propose to pass under review and criticise in the articles appearing under this heading the most recent work in perfecting the administration of anæsthetics. Whenever possible, I shall personally test the various methods and substances advocated by different authors, and express an opinion upon their practical value to the general practitioner.

The safety of the patient is always to be the first consideration, and no drug, whatever may be its apparent ideality in producing a painless narcosis, should be entrusted to the hands of an uninstructed person for administration.

There can be little doubt that a large number of fatalities under anæsthetics in this country are due to the unpractised administrator; for, whatever be the gas or vapour used, signs of respiratory obstruction—the main cause of these accidents—cannot be detected by the unskilled, nor rectified in time to avoid death when unrecognized by "the man at the helm."

Time and trouble must be expended by those who may be called upon to place their patients in a condition of narcotic sleep before they can justly expect to do so without jeopardising the lives of the latter and their own reputations. Everyone who prescribes opium to his patients knows the vastly different effects produced upon half a dozen people by a similar dose; and it is only the skilled and experienced man who can say what will be the likely result of a definite amount administered to a particular individual.

In exactly the same manner the practised hand administers anæsthetic vapours to his patients, adjusting his methods and the quantity exhibited to the type of human being he is treating, and to the physiological pathological, and mechanical peculiarities of that one person. Broad roads may be laid down by those who are qualified to teach the methods of work, but in comparatively few instances will these be enough to prevent an unskilled rider from mishap due to unexpected obstructions on the way. The main truth to be grasped before administering a general anæsthetic is that any obstruction to free respiration must be *immediately* rectified at whatever time it occurs; this obstruction most commonly arises from the base of the tongue touching the pharynx, and it may be obviated at once by raising the chin, or pushing forward the angle of the jaw. A somewhat insidious form of asphyxia arises under chloroform from this cause, and is often unrecognized, owing to the shallow respiration being almost inaudible to the administrator. Slight blueness of the face should give warning that some asphyxial factor is at work and will eventually cause depression. Another cause of obstructed respiration is to be found in the nose. A nasal airway partly blocked, but sufficient for normal require-

ments will not always be adequate to maintain proper oxygenation under an anæsthetic, and *a small mouth-prop between the teeth* will frequently allow a patient to be tranquilly anæsthetised who would otherwise be a source of anxiety throughout the operation. *Larnygeal spasm may be produced by operative procedures upon the rectum, urethra, spermatic cord, and bladder ; stretching of the cervix uteri also* will often cause a reflex spasm of the glottis, indicated by high-pitched crowing inspiration. This is a real difficulty, and should first of all be treated by deepening the anæsthesia ; then, if the spasm does not relax, the asphyxia it produces must be relieved by allowing plenty of air, and, in children, the operator should be warned of its occurrence, and should be requested to desist from the dilatation or stretching until it passes off.

Another point which must receive careful consideration is that of the *danger of very shallow respiration* from the point of view of the heart. In operations exposing the jugular vein in the neck, I have repeatedly observed the effect of deep thoracic inspiration in efficiently emptying that vessel. The right side of the heart is greatly assisted in its suction-action by the movement of the chest wall, and, when the latter is very feeble, the right auricle and ventricle alone are obliged to accomplish the work of emptying the venous channels ; a dusky pallor under chloroform may often be made to pass away by stimulating the breathing to ampler expansion movements. Rubbing the lips with a towel and, if the lid reflex be present, a little more of the anæsthetic will often accomplish this result. Of course, if the lid-reflex be absent, and other signs of depression appear, the anæsthetic should *always* be withdrawn and artificial respiration resorted to.

While remarking upon the concurrent asphyxial factor, it should also be borne in mind that cellulitis and abscess in the neighbourhood of the trachea, cystic thyroid tumours and other forms of growth in the neck, besides all those condition which fix the jaws or prevent the possibility of opening the mouth, must always be regarded as productive of grave danger under a general anæsthetic. Patients with paralysed vocal cords or growths within the glottis, may be successfully anæsthetised with chloroform ; but only when, as in the above mentioned conditions, unremitting attention is paid to their progress and tracheotomy can be immediately performed if asphyxial symptoms supervene.

VERSION AND CONTRACTED PELVES.

We are in receipt of several letters from subscribers asking various questions which all rest upon an uncertainty regarding the proper place of version in the management of cases of dystocia.

We would like to give satisfying and final replies to all; we would like to speak *ex cathedra* and feel that this obstetric ghost has been finally laid to rest; but enquirers are not of the class who take their beliefs in the *ex cathedra* way. Nothing but sound argument will expand their faith. In so far as the employment of podalic version for delivery of the fetus in cases of contracted pelves is concerned, we must recognize that two marked changes in the situation, as it existed in the times of the late Sir James Simpson, have come to the front. It is no longer believed that compression and traction with the forceps, when applied to the antero-posterior diameter of the fetal head, causes an increase in the bi-parietal diameter. The Fry forceps were constructed to meet this exploded idea. The cranial bones, hinged at the base of the skull, elongate under compression in the occipito-mental diameter, and do not to any extent bulge in the spaces between the blades of the forceps. One desideratum which militates against forceps in cases of such contraction as prevents engagement of the head, the want of moulding, might be offset by version if the latter allowed a few hours' time for passage of the head through the pelvis. In such cases many a head could be brought through the pelvis by continued traction on the breech which could not pass head first under forceps traction. But no such needful time can be taken, if we would deliver a living child.

The second change in the situation to-day which lessens the availability of version, is the great improvement in the two child-saving operations: symphysiotomy and Cæsarean section.

When the obstetric mind was being formed on this question of version, it had to face as alternatives a mortality for the mother so great that death of the child as the result of version became of no consideration.

Ask a medical student to tell you why we should succeed in delivering a head by version which we cannot with the forceps, and you will seldom get an intelligible answer. Ask a teacher and he will say it is because we get a better adjustment of the head to the pelvic inlet, and perhaps he may add that we can apply greater power of traction. The first is more or less true. In a few cases it is due to the peculiar shape of the pelvis, in many of them to the want of skill in the operator in applying forceps to an unengaged head. The second argument has not been proven. We cannot safely apply more traction to the after-coming head by trunk traction than we can apply with the forceps. The additional aid which we give by supra-pubic pressure on the unengaged head can make the statement true as to the power applied, but such pressure, we must believe, does what we long thought the forceps did, increases the bi-parietal diameter, and in this case also that of the occipito-frontal diameter.

A strong factor that has added much to the popularity of version has been that it permits the operator to avoid meeting the question of a capital operation.

Most difficult labor cases are largely impromptu in character, as regards an important operation, and this by-way method (version) has always enough promise in it to tempt a following. Perhaps we should not complain that there is a situation left which is antagonistic to the use of the knife.

Notwithstanding the greater fetal mortality which must always appertain to version over forceps, symphysiotomy, or Cæsarean section, it would have an impregnable and satisfactory claim to selection after forceps if we could always guarantee promptly successful passage of the head through the pelvis once version has been accomplished. But, unfortunately, we can never obtain such assurance where forceps have failed. When we consider this fact, and when we realize the comparatively lessened risk in symphysiotomy and Cæsarean section, by which methods the child has a vastly surer life prospect, are we not justified in calling version an obstetrical compromise? To manipulate the fetus until it is dead, when we can perform a craniotomy on a dead child, rather than boldy meet the issue at the start, is distinctly a compromise, not necessarily wrong, but still a compromise.

Two able papers, recently published in *Obstetrics* by Williams and Dobbin (see *Obstetrics*—May, June July and August), draw attention to some interesting facts bearing on this question of version.

In their study of 1,000 cases of labor occuring in the Johns Hopkins Hospital, a most instructive fact is shown, that much the greatest fetal mortality occurred in those cases of pelvic contracture which were of moderate degree, the percentage being 25 in the class having a conjugata vera diameter of from 10.75 cm. to 11.50 cm., and 60 per cent. with the same diameter measuring from 10.00 cm. to 10.75 cm.; while the mortality was but 20 per cent. where the same diameter was from 9.00 cm. to 9.75 cm. The number of cases represented is not sufficient to make these particular figures the basis for fixed conclusions, except that they are in harmony with much more extensive figures by other writers. The striking import of these figures is, *that it is in border line disproportions between fetal and pelvic diameters that we get the worst results for the fetus, and it is border line cases that are most frequent;* that, filling the mind of the physician with doubt, cause him to follow the tentative route of cervical dilatation, forceps, version, and possibly basiotripsy. First, the fetus is shocked by severe forceps compression of the brain, then the heart is shocked by the manipulation of the cord necessary in version, and if it still lives, it must run the gauntlet of asphyxiation. Crushing the after-coming head is not a difficult or dangerous operation to the mother, if one has the proper tools, a Braun's or Martin's basiotribe, but very few general practitioners have such an instrument, or can get one from a neighbor physician, and the operation then becomes very difficult.

Did we have all the statistics, it would be a close race which causes the greater mortality in obstetrics, puerperal infection, or border line dystocia. Let us put a greater burden of proof upon the physician who would perform version in cases of pelvic contraction; let us demand greater certainty and less tentativity that he can bring the head through the pelvis when he has delivered the body. Let us call it by its right name, an obstetrical compromise—*Obstetrics.*

EPITOME OF CURRENT MEDICAL LITERATURE.

INTERNAL MEDICINE.

Paroxysmal Hemoglobinemia; Report of a Case.

P. S. Roy.* The chief causes of this condition are cold and fatigue. In this case the attack came in a woman 60 years of age, after the fatigue of sight-seeing. She had suffered from uric acid attacks, and had, after the hemoglobinemia disappeared, a sub-acute arthritis of the wrist and elbow. She also gave a history of Raynaud's disease. The attack was typical—chill, headache, vomiting, soreness of the muscles, particularly those of the neck: temperature 102°, generally lower; marked coolness of the skin, and slight jaundice followed later. The urine was quite dark; specific gravity 1022, which is higher than usual, and 50 ounces were passed in every 24 hours. No malarial history could be obtained. The mind was very stupid for two days. The urine was examined on the third day and the diagnosis was not made until then.

Intermediate Altitude for the Consumptive.

Anderson.† In a large percentage of cases an intermediate altitude yields in the treatment of consumptives very satisfactory results, where lower and higher altitudes fail to benefit the patient. A record of some two hundred cases sent to an altitude averaging from 3000 to 4000 feet, where the higher altitudes, within five to six weeks, failed to show any improvement in the patients' condition, seems very conclusive. The author finds the Mesilla Valley in New Mexico the most favorable resort for these cases. Frequently within a few months the patients will have improved sufficiently to enable them to reside in a higher altitude if desired.

Typhoid Fever; Note on Two Epidemics in the Iowa Hospital for Insane.

G. Boody‡ draws the following conclusions: 1. Cases of typhoid fever are quite rare, and the subject is deserving of thorough investigation wherever an epidemic occurs; in order to determine the relative frequency of the disease, all methods for confirming the diagnosis should be rigidly applied. In these two epidemics it occurred but once in 43 cases. 2. Of the patients who recovered, 25 per cent. showed marked improvement in nutrition and muscular strength, while the remainder only reached their former condition in these respects. Insane patients with typhoid fever do not show such a degree of improved nutrition after recovery as do those without mental complications. The patients who improved mentally showed a corresponding favorable change

* Phila. Med. Jour., Sept. 2, 1899.
† Therapeutic Gazette, July 15, 1899.
‡ Jour. Amer. M. A., September 2, 1899.

in nutrition, and those whose mental status returned to normal made the most striking changes in this direction. 3. Of this number, 16.6 per cent. all dementias, seemed brighter mentally, but relapsed as soon as convalescence was completed, except one case; 2.77 per cent. all melancholias, made partial recovery, and one is just fairly able to resume the ordinary duties of life; 5.55 per cent., one a case of katalonia and one of acute mania, regained completely their former mental status. The behavior of cases of dementia would lead one to think the fever had some influence on the mental condition, but it is of no value, since relapse occurred very soon. The prognosis in melancholia is favorable for some improvement; in acute mania it is generally favorable for recovery.

Report of a Case of Cerebral Meningitis Manifesting Extraordinary High Temperature.

R. B. Christian * reports a case of meningitis, without complications, in which the encephalon alone was involved. The patient was a blind girl, 26 years old. On the first day she com plained of fullness of the head and nausea and had a temperature of 105°. For three weeks remarkably high temperature were recorded, verified by five thermometers, three of which were broken, when the excessive heat would have forced the column of mercury higher than the capacity of the instrument would allow. On the second day of the illness temperature by mouth registered 110°, when the thermometer broke; from then for three weeks the temperature varied between normal and 118°, being usually excessively high. The patient was in a state of deep stupor for ten days prior to death; there was no extraordinary elevation of temperature after she got into this condition until a short time before death.

A Newer Pathology of Epilepsy.

Brower† reports the views of Dr. H. Krainsky. The observations of Dr. Haig are confirmed as to the relation of uric acid elimination to the seizures, namely, a diminution in elimination just before the paroxysm and an increase in the amount after the attack; but he disagrees with him as to uric acid being the retained poison causing the attack. Krainsky has succeeded, by a number of experiments, in demonstrating that epilepsy is an intoxication and that the poison is in the blood. By injecting a few c.c. of blood drawn from a patient in a status epilepticus into a rabbit, violent epileptic seizures were produced in two or three minutes, while blood taken after the seizure produced no effect. He then proceeded to determine the toxic agent, and by experiments demonstrated that it was carbonate of ammonium, a substance closely related to uric acid. The bromides were found of value, not only for their sedative effect, but for the ease in which they decompose this salt. Since the formation of carbonate of ammonia is the product of abnormal nitrogenous metamorphoses, one can readily see the importance of a dietetic treatment.

* N. Y. Med. Rec., Sept. 2, 1899.
† Medicine, September, 1899.

The Avoidance of Preventive Hemostatis in Laparotomies.

This thoroughly surgical article by DR. A. VON GUBAROFF* contains many suggestions which are as interesting as they are novel. After seventy-four experiences the author states that he ties only what bleeds and this after he has cut it. He profits by this procedure as follows: 1. A better idea of anatomical relations is gained than would be possible if a ligature *en masse* had been applied. 2. Secondary hemorrhage is less likely. 3. Much time is gained, as many an unnecessary ligature is put on in the old way. 4 Fixed tumors can be made freely movable in this way alone. Especial stress is laid upon the fact that ligature of veins is always unnecessary, because they cannot bleed after corresponding arteries have been properly tied.

Justifiable Artificial Abortion and Induced Premature Labor.

W. C. BOWERS.† In any any di-ease of a woman which is aggravated to so great a degree, because of pregnancy, as to endanger her life, and which cannot be remedied so that she may live after labor, induced abortion should be considered in her interest; or, if late enough in pregnancy, in the interest of both mother and child. The possibility of waiting for the viability of the fetus should always be thought of if such a thing is possible without jeopardizing the woman's chances. The reasons for premature emptying of the uterus are many; the procedure is considered in these diseases and conditions, viz.: nephritis, advanced tuberculosis, aneurism, valvular lesions of the heart, chorea gravidarum, peripheral neuritis of pregnancy, goitre, diabetes mellitus, eclampsia, cancer of the uterus, melancholia, hystero-epilepsy and insanity, irreducible displacement of the uterus, unavoidable hemorrhage of placenta previa, accidental hemorrhage, and hyperemesis gravidarium. The last is probably the most common reason for interrupting pregnancy.

Vaginal Fixation in Paralysis and Retroflexio Uteri.

A. Schücking,‡ the first to treat the uterus thus, claims that none of the modifications of the operation which he proposed in 1887 has insured the patient against recurrence of her trouble, because none have sufficiently bent the anterior wall nor sufficiently stretched the posterior one. Not all prolapses and retroflexions require an operation. Still, when any one is to be performed, his own seems to the author more nearly free from danger than any other. One point on which Schücking rightfully lays stress is that in the pursuit of his method the peritoneum need not be opened.

Difficult Points in Gynecologic Diagnosis.

W. Krussen.§ When the history of a case indicates clearly or possibly the presence of some pelvic lesion, local examination should be insisted upon. The administration of an anesthetic is often indispensable in making this examination and no positive diagonis should be made

*Centralblatt für Gynakologie, July 29, 1899.
†Jour. Amer. Med. Assn., September 2, 1899.
‡Centrablatt fur Gynakologie, August 5, 1899.
§Medicine, September, 1899.

in an obscure case without its employment. Pregnancy is always to be remembered as a possible condition as causing increase in size in uterus and abdomen. The early recognition of carcinoma of the uterus is absolutely essential to its successful treatment. The chief symptoms are hemorrhage, watery or purulent discharges, and pain; but these occur so irregularly that many cases may present only one of the trio before extensive invasion has occurred. An early diagnosis can only be made with absolute certainty by microscopic examination of either an excised wedge from the suspected cervix or of portions of the endometrium removed by curretage. Epithelioma of the vulva is less frequent than malignant disease of the uterus; it is liable to be confounded with simple vegetations, with lupus of the vulva, and with syphilitic affections. After malignant disease, the recognition of ectopic gestation ranks next in importance. The differentiation of appendicitis from pyosalpinx or ovarian disease is another interesting point in gynecologic diagnosis. A frequent error is that of mistaking ovarian cysts for ascites, though ordinarily careful palpation and percussion will distinguish between them. The differentiation between fibrocystic tumors of the uterus and ovarian cysts is very difficult and at times impossible. Many of the mistakes in diagnosis are due to the fact that sufficient time and thought are not given, nor all available clinical methods and instruments employed, in studying the individul case.

Treatment of Fissures of the Papillae.

Le Maire* used a saturated solution of orthoform in 80 per cent. alcohol in some sixty cases of fissured papillæ. The pain disappeared very readily, and the fissures healed rapidly. It is to be recommended especially in small fissures; in deep ones the results were very unsatisfactory. Disturbances in digestion were not noticed in the children during the use of orthoform upon the mother's breast.

Management of Pregnancy Complicated by Abdominal Tumors.

R. B. Hall† discusses the management of ovarian and uterine tumors complicating pregnancy. The danger of abortion or premature labor following the removal of ovarian tumors has been exaggerated. Frequently the tumor is discovered only at the time that pregnancy occurs. The danger to the mother is not markedly increased by the fact that she is pregnant so far as the operation relates to the removal of the tumor. The ease with which patients recover under these conditions is illustrated by a case in which recovery was uninterrupted and a healthy child was delivered at full term. Some cases abort in spite of all precautions, and when this occurs the danger to the patient is greatly increased. As to fibroid tumors of the uterus, operation means hysterectomy and therefore the sacrifice of the child. Operation is advised in all cases if there is no chance of recovery without it; also in cases where the tumor cannot be lifted out of the pelvis and where there are any complications

*Amer. Gynec. and Obstet. Journ., August, 1899.
†Therapeutic Gazette, July 15, 1899.

in the tumor itself, such as twisted pedicle or ruptured cyst. Operation is not advised in cases of ovarian tumor of moderate size that lies above the uterus and when the tumor itself is too large to occupy the pelvic cavity, if the woman had not suffered from the tumor and there were no complications. The question as to when operation should be performed in fibroid tumors of the uterus must depend on each individual case. The question as to saving the child must be discussed if the woman has passed four or five months of gestation and it is possible to carry her to or near the full term of pregnancy.

Preliminary Report of Transplantation of the Ovaries.

James F. McCone,* in a series of experiments on the ovaries and fallopian tubes of animals, has reached the following conclusions: 1. Contact between ovary and tube is not essential for conception. 2. Ovaries grafted from one animal to another part of the same animal continue to grow, to functionate, and pregnancy can and does occur. 3. An ovary grafted from one animal to another of the same species continues to functionate; maintains the normal condition of tubes and uterus. Pregnancy can occur. 4. Ovaries grafted from one species to another continue to functionate and seem to prevent post-castration atrophy of tubes and uterus. 5. Best results are obtained where the raw surfaces of the transplanted ovary is sewed to a denuded surface. The chief practical value is in the suggestion of the conservation of healthy ovarian tissue even on the opposite side from a patent tube, the possibility of grafting in the human species and the prevention of atrophy and post-castration nervous symptoms.

Is the Integrity of the Amnion a Condition Sine Qua for the further Development of the Ovam after Rupture of the Chorion, etc?

Neugebauer† maintains in contradistinction to the views of Price, that the integrity of the amnion is necessary for the further development of the embryo. He refers to a case of ectopic pregnancy described by him in 1898. The child lay perfectly free in the peritoneal cavity between the loops of intestines, presenting no trace of the embryonic membranes. He concludes that the integrity of the umbilical cord and placenta, and not the amnion, decides the fate of the embryo in the case of a rupture of the membranes.

Some of the Commonest Reflex Symptoms from Disease of the Rectum.

Walkins.‡ The most pronounced and annoying reflex symptoms are those due to disease of either the rectum or generative organs. Owing to the abundant supply of cerebro-spinal and sympathetic nerves, they refer all pains in the pelvic region to the generative organs. A great number of cases therefore, applying to the gynecologist for relief suffer from some rectal disturbance. The three cases reported are typical ones of this class. The patients applied for gynecological treatment. When questioned as to whether any trouble existed in the rectum it was always

* American Journal of Obstetrics, August, 1899.
† Centralblatt fur Gynakologie, August 5, 1899.
‡ Medicine, September, 1899.

answered in the negative. Upon examination an area varying in size from a 25-cent piece to a dollar was found where no mucous membrane existed. It begins at the muco-cutaneous junction and extends up the wall of the bowel. They are neither tuberculous nor syphilitic in character, and rapidly yield to local treatment. In one case the ovaries had already been removed by a gynecologist and it had been suggested in the other two cases. All three cases had great relief from local treatment.

A type of Paralysis in the Distribution of the Peroneal Nerve following Labor.

Aldrich* reports three cases in which this form of paralysis was present. The first case was one of prolonged labor, followed by a right peroneal paralysis and neuritis with extension to the other side. The recovery from the neuritis was slow, with a persistence of some atrophy and paralysis. The other two cases presented the same picture, with the exception that one was a left-sided case. Why this nerve should be affected in these cases of prolonged labor is readily understood when one considers the anatomy of these parts. The sacral plexus is joined in most cases by the lumbo-sacral cord formed by the fibres of the fourth and fifth lumbar segments. This cord passes downward, winding over the sharp angle of the linea innominata into the pelvis, a position just suitable for pressure in a case of long labor. The fibres of the sacra-lumbar cord keep their identity even in those cases in which they join the sacral plexus and form the peroneal nerve upon leaving it. Little need be said as to treatment, as it resolves itself into treatment for any ordinary neuritis. The hot air treatment has proved the most satisfactory.

Organotheaphy in Gynecology.

Newman † concludes from his own observations and the investigations of others as follows: The thyroid gland exerts an inhibitory action upon the pelvic genital organs, especially upon the epithelial elements of the endometrium. As a result of this specific action there follows a retardation of hemorrhages from the uterine mucosa, an action antagonistic to that exerted by the ovarian secretion. In gynecology, thyroid therapy is especially indicated in hemorrhagic affections of the uterus, pelvic congestion, uterine fibromata, hemorrhagic endometritis and chronic tubal disease. The more chronic the case, the more rebellious to thyroidization. The thyroid also causes an increase in metabolism of the mammary gland and is consequently indicated in all cases of insufficient lactation. Owing to the tendency to thyroid intoxication, it is well to discontinue the drug for a period of a week to ten days at regular intervals during the course of the treatment.

Rectal Irrigation in Gynecology.

Hyde.‡ The use of rectal irrigation in some gynecological cases has proven of very great benefit. For the irrigation either a rubber, aluminum or glass tube is used, and at least two gallons, preferably

* Amer. Gynec. and Obstet. Jour., August, 1899.
† Therapeutic Gazette, July 15, 1899.
‡ Am. Gynecological and Obstetrical Jour., August, 1896.

six to eight, of a saline solution, temperature 110°-115° F., are employed. This has advantage over the vaginal douche in that a larger amount of fluid may be used and it comes in contact with a much greater vescular surface. The writer recommends it especially in: 1, leucorrhea, 2, as a substitute for vaginal douching in young girls; 3, acute and chronic ovarian and tubal lesions, with the possible exception of pyosalpinx; 4, intestinal paralysis following sepsis; 5, after major pelvic operations, to relieve any abdominal discomfort or tympanitis; 6, intestinal colic; 7, doubtful in constipation. It has only been employed in two cases coming under these seven heads where no good was observed.

PATHOLOGY AND HISTOLOGY.

A New form of Elementary Granules in Blood, Sputum and Tissues of Man.

L. GRUENWALDT* found a new form of granules, which he calls hypeosinophilous; the majority of the round cells of sputum, of sero purulent exudates, of pus and of inflammatory new formations contain minute to minutest granules, which are stained with eosin, but are decolorized by acids and mostly by alkalis, and which in Ehrlich's triacid-stain appear fuchsin red. A great number of cells, therefore, which were thought to be filled with homogeneous protaplasm, contain granules, while other cells, the granules of which are called neutrophilous, now appear in another light. It is necessary that before staining the specimens are either simply dried in the air or heated very carefully. The author found the same phenomena in the blood; the hypeosinophilous granules are seen in mono and polynuclear cells. Based on his findings the author asks for a revision of the previous nomenclature of the granules.

The Preservation of Mitotic Figures after Death and after Transplantation and its bearing upon Transplantation—Experiments.

The question, how long after death or extirpation mitoses can be demonstrated, has so far not been dealt with exhaustively. H. WOLFF† kept a series of specimens for a long while (up to six weeks) at room-temperature, in the incubator or in the ice-chest, and showed by control experiments that the existing mitoses can be demonstrated as long as it is possible to demonstrate the finer texture of the tissues. A progress of the mitotic process or the appearance of new mitoses does not take place after death. In aseptically kept pieces of epidermis the author, too, could find the same mitoses as in a fresh specimen; the reliability or the success of a transplantation can therefore not be proven by the existence of a few mitoses.

* Centralblatt fur innere Medicin, 1899. No. 30.
† Archiv für klinische Chirurgie. Vol. 59, No. 2.

A Case of Foreign Body in the Heart.

Ophuls* reports a post-mortem case in which a piece of needle 2½ cm. in length was found in the wall of the heart. Its tip projected about 7 mm. into the cavity of the left ventricle and was covered by a thin greyish-white film with glistening surface. At the bottom the projecting part is surrounded by a cone-shaped mass of dense white scar-tissue, which shows that the needle must have been in its present position at least several weeks, possibly longer. The needle was undoubtedly a thin trocar introduced while making an explorative puncture of the pericardium. There was no evidence of a thrombus formation at the point of lesion, in all probability due to the smoothness of the foreign body and rapidity of the blood current. There was nothing to indicate that the death of the patient was in any way caused or even favored by the presence of the foreign body in the heart. In fact the post-mortem examination revealed several morbid conditions entirely without connection with the abnormality in the heart, which in themselves constituted a cause amply sufficient to explain the cause of death. During life the heart did not exhibit any symptoms which could be attributed to the presence of the foreign body. There was no murmur.

SURGERY.

A Year of Abdominal Surgery at the Pennsylvania Hospital, Philadelphia.

F. T. Stewart.† During the year ending May 1, 1899, there have have been performed in this hospital 164 operations implicating the peritoneum. Of these 28, or a trifle more than 17 per cent., have succumbed. In 8 of the fatal cases a general peritonitis existed at the time of operation, in 12 a peritonitis which was localized and suppurative; 5 died of peritonitis developing after operation, 3 being traumatic cases, 1 a strangulated hernia, and 1 a case of ectopic pregnancy; 2 died of exhaustion, and 1 died of shock and hemorrhage following gunshot wound of the liver and vena cava. This death rate is very low, considering the class of cases entering the hospital, many of them delaying until no other resort is left. The majority of the abdominal sections were life-saving procedures There were 31 hernia, 46 cases of appendicitis, 1 liver abscess, 1 case of hydatid disease of the liver, rupture of the urinary bladder, 10 hysterectomies, 4 stab wounds of the abdomen.

Acute Abdominal Symptoms Demanding Immediate Surgical Intervention.

M. H. Richardson.‡ A careful study of initial symptoms and their importance cannot be too strenuously urged upon the general practitioner. Three classes of abdominal lesions must be considered; 1, those in which hemorrhage is the chief factor; 2, those in which peritonitis is

* Occidental Medical Times, August 15, 1899.
† Phila. Med. Jour., Sept. 2, 1899.
‡ Phila. Med. Jour., September 2, 1899.

the chief factor, and 3, those in which intestinal obstruction is the chief factor. Practically, all of these permit cure. Recovery depends largely upon the promptness of intervention. The most fatal lesions are those which quickly produce extensive gangrene. If all acute lesions were operated on at the very onset, the mortality in the worst would be slight. The diagnosis of an acute lesion that needs immediate operation must be made from the initial symptoms the exact nature of the lesion may be deferred. Pain, palor, feeble pulse, low temperature, means hemorrhage; with irregularities in menstration and tender breasts, extrauterine pregnancy; after operation, internal hemorrhage. In a general way a diagnosis as to the probable cause should be made exact enough to guide the surgeon to the affected half of the abdomen. In cases of doubt, exploration is indicated when the symptoms enumerated are present, but operation should not be performed by the inexperienced, as is so often the case in first magnitude operations.

Nervous Complications of Fractures of the Lower End of the Humerus.

A. BROCA and A. MOUCHET* write that the above mentioned disturbance much more commonly follows injuries of the lower than those of the upper end of this bone. As regards age, the young are much more often affected. The median, the radical, or the ulnar nerve may suffer, as may any two of them, or indeed all three at one time. Such nerve lesions may be divided into three kinds: 1, primary; 2, secondary; and 3, remote. The first named date from the time of the injury and are partial or complete paralysis, resulting from the affected trunk being cut off, torn, contused, or held in a fissure. The secondary varieties manifest themselves several days after the accident, and are due to the "callus" or a misplaced fragment pressing upon the nerve in question. Remote paralysis was observed by the authors in two cases as late as eighteen years and twenty-two years respectively after injury. In both a decided "cubitus valgus" was apparent, with progressive approximation of the olecranon and inner condyle; in this way the groove for the ulnar nerve was gradually narrowed with consequent squeezing of it. In every case electro-diagnostic methods must be employed. Treatment in the primary form is to be operative and undertaken at once in case paralysis is complete, otherwise one can wait a few months. In the second variety the nerve must nearly always be freed from its confining "callus" or fragment. The remote paralysis requires as a rule that the furrow for the ulnar nerve be made wider.

Dangers of Hydrogen Dioxide in Surgery.

SPENCER‡ reports a number of interesting, though unpleasant, results in the use of hydrogen dioxide in cavities with small outlets. It has been clearly demonstrated that the expansive force of the peroxide not only made new channels in the tissues, but even carried and deposited pyogenic organisms in these channels. The gas generated

* Revue de Chirurgie, June 10, 1899.
‡ Therapeutic Gazette, July 15, 1899.

by the peroxide travels into the subcutaneous areolar tissues, along nerves and arteries, and separates the layers of muscle fibers. Since the introduction of peroxide mastoiditis has become more frequent than formerly; this the author attributes to the use of hydrogen dioxide in middle-ear disturbances. The author concludes that it is unsafe to use it in infected wounds in certain locations, with or without pus, in abscess cavities, either acute or chronic, where the walls are supposed to be weak, in closed cavities, and in the tissues surrounding the larynx and trachea, especially in young children.

The Evil of Ritual Practice in Circumcission.

A. Miller* enters a plea for the abolition of this operation by laymen. The dangers from infection and hemorrhage are not apparently realized by the public. The men who perform this operation ritually possesses neither medical knowledge nor surgical skill; they have no idea of the existence of germs, understand nothing about the theory of sepsis and antisepsis, and in a great many cases are even void of personal cleanliness. The operation should in every instance be performed by a physician.—*Exchange.*

INEBRIETY CURES.

"The Hayden Treatment" has been recently launched in Liverpool. This treatment is for the cure of inebriety, which, ever since the beginning of the Keeley Cure, has been a fruitful field for the charlatan. In this instance the drug employed was discovered by an Irish Canadian by the name of Hayden, and, as in similar instances, it has been necessary to keep the nature of the drug a profound secret. Marvellous claims are made for the new treatment, which is said to absolutely cure seventy-five per cent. of all cases; there is no restriction upon those who are under treatment, and all those who wish may indulge in the moderate use of spirits. The cure is said to be effectual in about three weeks. The claim that seventy-five per cent. are cured will, of course, attract little attention on the part of those who seek this treatment, and such a trivial circumstance as the institution having just been opened will make little impression upon them. The new exploitation is strikingly like the red cinchona cure of a few years back, but the method of its exploitation shows a striking resemblance to the late treatment of the morphine habit by "Husa." The wonderful plant which passed under this name was obtained by a physician who alone could put himself in communication with certain mysterious Indians in the Everglades of Florida. These Indians exchanged the precious plant for beads and trinkets at some out-of-the-way place. This marvellous plant was unknown to botanists and, singularly enough, it could not be preserved by drying or other means, so that it could be examined. An analysis of the extract of the "Husa" preparation showed it to contain a small quantity of burnt sugar, morphine and alcohol. How cheap and simple are the means which successfully fool the public!

* N. Y. Med. Rec., Aug. 26, 1899.

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NON-SPECIFIC URETHRITIS.

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In the present paper I will attempt to demonstrate the non-specific nature of some cases of urethritis, together with the treatment of the same. No doubt, every practitioner is aware of the fact, that in a number of instances, urethritis may be due to a legion of causes, other than the infection by the gonocacci of Neisser.

There are however a class of physicians who obstinately adhere to the false presumption, that every case of urethritis is caused by the latter factor and it is therefore my aim to prove that in a number of cases, we have to deal with a so-called "innocent or non-merited" form of urethritis.

To begin with, I will cite three cases, occuring in my private practice, which will strongly affirm my statement.

Case 1. L. D. male, four years of age. Patient's mother stated, that for two or three days she noticed a discharge from the urethra, together with a swollen and inflamed condition of the organ. On examination I found a muco-purulent urethral discharge together with a balano-posthiter. Interrogation as regards cause revealed nothing. The family and previous history of the boy is good. I prescribed an alkaline diuretic and told her toreportin three days. After that time she returned and was pleased to state that patient is improving. I once more examined his genitalia and by closer inspection I noticed something projecting from the meatus urethral, evidently a foreign body. After extracting and washing the latter it proved to be a hay or straw stalk, the fibres of which underwent maceration but still sufficiently intact, to reveal the true cause of the malady. Treatment was continued for two weeks longer and patient fully recovered.

In this case we find the clinical picture of an acute urethritis, due undoubtedly to a foreign body, introduced into the urethra in some way still just as severe as an ordinary gonorrhoea.

Case II. Mr. McB, 28 years of age, bookkeeper, Russian by nationality with a good past and family history, presented himself to me with the symptoms of a severe form of urethritis of about two days' duration. This poor fellow seemed to be greatly embarrassed, being recently married,

and unaware of any immoral sexual transgression, he was much perplexed to find himself attacked by such a malady. He admitted however, that he indulged in venero with his wife. I am satisfied to take the latter, as the real cause of the affection. I prescribed an alkaline diuretic and forbade all sexual intercourse and in less than two weeks patient was well. This case satisfactorily proves, that an indulgence in venero, may bring about a severe urethral inflammation, simulating specific urethritis.

Case III. B. W., 45 years of age, laborer, German by nationality, married, was attacked—rather suddenly—by an acute urethritis. The family and past history of patient showed nothing abnormal. He was a robust, plethoric looking man. On examination I found a urethral discharge with a considerable degree of posthiles He bitterly complained of pain in the testicles and in the groin, of a lancinating character and periodic in nature. No specific cause could be detected and patient denies of having had any improper sexual intercourse. Occasionally he is molested by headaches. I prescribed an alkaline diuretic and directed him to bring me a sample of his urine. The latter had a milky appearance and upon treating it with a solution of ferric $(OH)_2$ hydrate a very heavy precipitate of Ferric Fe_3 $(PO_4)_2$ phosphate was thrown down, showing an abundance of triple phosphates. I continued the alkaline treatment, with the addition of H. Extr. of Pichi. and put the patient upon a strict dietary regime, forbidding him, for the time being, alcoholics and all farinaceous and phosphatic food. The pain gradually declined, the urethral discharge diminished and the urine became clearer and patient is feeling much better now.

This case in its turn shows, that a phosphatic abundance in the urine, may by virtue of the irritating properties of the triple phosphates, set up a urethral inflammation and a reflex testicular neuralgia. If space would permit, I could cite a number of similar cases.

To summarize then: it is evident from the above, that urethritis is due to divers causes, others than the microbic.

"The etiology of urethritis,"—says Hayden in his excellent manual of venereal diseases—is not as yet an absolutely settled question and the physician should therefore exercise the greatest care and precaution, before giving his opinion as to its origin, for on his decision may rest the honor and happiness of wife, husband and family. Many men contract typical gonorrhoea from women either during or immediately after the menstrual epoch, the women being free from gonorrhoea. These cases are usually severe in character. It is also possible for a man to contract gonorrhoea from the secretions of the uterus, a lacerated cervix and perineum and vulvo-vaginal secretions due to uncleanliness. Bearing in mind the foregoing facts, which have been demonstrated by most careful observers, the physician will do well to remember, that gonorrhoea in the male does not necessarily mean gonorrhoea in the female, and that a man can contract gonorrhoea from a women, who is true and virtuous, but who is suffering from some disease of the uterus, cervix, etc., which give rise to irritating discharges; it is also well to bear in mind, that the menstrual secretion is very acrid in character and can and does produce urethral inflammation in the male."

Owing to my experience in venereal diseases both in hospital and private practice, it would seem that a differentiation between the specific and non-specific forms could arbitrarily be arranged. There is no diagnostic value attached to this differentiation, nor is it my wish to put the same down as a clinical factum. It may, however, be useful to some extent and in time may afford an available means for diagnosis.

Specific.	Non-Specific.
(1) Etiological: Gonococci of Neisser.	(1) Eliological: other micro-organisms, notably the trichomaines vaginalis; foreign bodies; hyper-acidity of urine; calculi; excessive venery; on exclusive albuminous diet; uric acid, Diathesis, etc. etc.
(2) Period of incubation 2-7 days.	(2) No definite period of incubation.
(3) Of longer duration and apt to become chronic in character.	(3) Duration from 2-4 weeks; does not tend to become chronic.
(4) Complications, Aspec, Adenitis, Orchites, etc. apt to be present.	(4) Usually no complications.
(5) Does not yield readily to treatment.	(5) Yields readily to alkaline treatment.
(6) General condition of patient more or less involved, i. e. fever, malaise, etc.	(6) Seldom so.
(7) Predominating between the ages of 20 and 30.	(7) May occur at any age.

Although the foregoing chart is of slight clinical importance, it may, as I mentioned, prove the means of a better understanding of the question under consideration.

A word about the treatment. I rely mostly upon the alkalies, as Pot. citrat., acet., or bicarbonat., in combination with a mild sedative as Hyoscyamus, to allay the urinary tenesmus. The diet shall be light, easily digested and non-albuminous, with the exception of milk, which the patient is allowed to drink *ad libitum*. Highly seasoned dishes shall be forbidden. Green vegetables are not to be recommended, but patient may partake of fruits, as apples, peaches, etc. The mineral waters, as Seltzer, Vichy, Appolinaris are an adequate beverage. Alcoholics, in any form, shall strongly be prohibited, as well as tea, coffee and cocoa. Direct the patient to abstain from sexual intercourse and sleep on a hard mattress but lightly covered. The bowels should be kept freely open by some mild laxative, as saline purgatives are apt to produce urethral irritation when the severity of the inflammation is in its decline. I add Fl. Extr. of Pichi. to the alkaline mixture. This drug seems to exert a sedative influence upon the urethral mucosa and augments the process of healing. Under the same category may be included the Fl. Extr. of Saw Palmetto. I condemn the use of injections in this stage and form of

urethritis and discard the various urethral irritants, as Copaiba, Buchu, etc. Cleanliness of the genital organs is imperative and patient should therefore bath his genitalia in hot water once or twice a day.

This is the routine treatment I adopted ; but as every case is a study by itself, I must say, don't forget to remove the cause and the latter is by no means uniform.

DIAGNOSTIC CURETTAGE.

BY J. RILUS EASTMAN, M.D., INDIANAPOLIS, IND.

In spite of the boasted brilliancy of recent microscopic technique, the pathologic friends of diagnostic curettage have not been able to lift this procedure to the plane of scientific acceptation. Even in cases of suspected malignant uterine disease digital exploration still has approval as the best of pertinent diagnostic measures.

Curettement as a means of diagnosis can count a few sporadic friends. Its foes are legionary. They may be classified for contemplation into two groups. The first is made up of these gynecologic routinists who, in deference to an over-refined sense of delicacy, or from sheer indifference to the less salient details of diagnosis, prefer not to explore the malodorous and unsightly matter vented from the diseased uterus or vagina, and who turn likewise unmindfully from the examination of feces, pus and sputum.

Hyrtl, the Viennese anatomist, discoursing upon the physiology of excretion, observes: "These functions, from foolish expectoration to natural defecation, are ugly and revolting ; therefore, despite their indispensableness, few persons excepting physicians and patients speak of them.

"The grateful impression which the beholding of a beautifully developed human form tends to make upon one, is lost immediately one connects the form in fancy with excretion. Then all illusions cease. Think of Zeus Olympus upon the cloud throne, in his hand a cuspidor replacing the thunder-bolt ; of sweet-eyed Juno blowing her nose ; of a belching Ganymede ; of Adonis surrounded with expelled intestinal gas ; of a sweating Vulcan ; of Achilles wrestling with a hard, unyielding stool ; of a sleeping Endymion *cum profluvio seminis nocturno ;* of a laboring Pallas Athene with flabby, pendulous paunch ; of the virgin Queen of the Night in parturient bed with streaming lochia ; of Venus Anadyomene with shame parts bestreaked with menstrual discharge. It were, perhaps, more esthetic had these functions been left apart from the make-up of God's image , but their creation came to pass, and we have no other recourse than to thank God if they continue to operate in healthful harmony."

Some of the most prized of scientific riches, riches surpassing those of Ormuz or of Ind., have been gleaned in exploration of the unpicturesque excreta. The modern medicine, of which we haughtily own ourselves disciples, has bulwarked itself with facts picked up on excursions of research in sputum, pus, and urine. In the feces new worlds of scientific

wealth await a heroic Columbus; and in uterine curettings, however homely they may appear to barbarian eyes, are pathologic pictures which charm the appreciative seeker, and which are of incalculable worth since they indicate the way to rational therapy.

The second class embraces those who use the utmost pains to gather diagnostic evidence, but who deem the examination of curetted material to this end a matter of small importance, preferring to contemplate the clinical symptoms and to examine locally with the speculum and finger.

Preliminary dilatation of the cervical canal sufficient to allow passage of an exploring finger is not unaccompanied by danger; indeed, fatal shock has been reported as its result. Curettement is the less heroic method, even with the possible attendant risk of perforation and peritonitis. Anesthesia is unnecessary, and with the aid of a rapid method of sectioning and staining like that of Thomas S. Cullen, of Johns Hopkins, the diagnosis may be made at a single sitting. Under some circumstances, as in the case of virgins, narrow senile vagina, elongatio colli, or fibroid uterus, digital intrauterine, exploration may be impossible. The finger cannot always distingnish benign from malignant neoplasms, but the removal of tissue with the curette leads to positive decision.

Without introducing the finger into the cavum uteri, fragments of endometrium may be removed by the sharp spoon, and a decision, at least as to the character of the piece examined, may be made; and with practice the condition of the entire endometrium may be determined with the microscope.

The procedure is indisputably indicated whenever suspicion of carcinoma or sarcoma exists; and this suspicion, it will be conceded, is well grounded whenever, in spite of well-directed treatment, recurring hemorrhages from the uterus present themselves at or near the time of the menopause.

In removing tissue by the curette for examination, it should be remembered that malignant disease generally has its beginning in the mucosa and that its indication is indicated by unevenness of the surface. The pieces therefore, should be taken from these roughened areas. Wherever allowable the cervical canal should be dilated to a diameter of about five millimetres. The curette or sharp spoon glides in easily, and with short, vigorous movements scrapings may be taken from the suspicious spot or from the entire endometrium as desired.

The manner of preparation for the microscope which has proved most useful is Ludwig Pick's modification of the method of Thomas S. Cullen, of Johns Hopkins University. The technique is as practicable in any physician's office as in an expensively equipped laboratory. The procedure has already been described in this Journal and is briefly as follows: The piece of tissue to be examined is brought directly from the operator's knife or curette on to the table of the Jungs-Höbel freezing microtome. This instrument is the "simplest cutting apparatus imaginable." It consists of a steel cylinder through which an ether spray plays on the under surface of a metal platform of about the diameter and thickness of a half-dollar piece. The knife, the exact counterpart of a car-

penter's plane, is set at right angles to the cylinder, in the short arm of a lever. In placing the tissue upon the microtome care should be taken that the knife cut vertically to the surface of the mucosa. (The microtome costs, in Germany, seven dollars.)

After cutting, each section is wiped off the knife blade with the finger tip and floated into a four per cent. formalin solution. After hardening for four minutes in the formalin, the sections are rinsed in water and brought for four minutes into four per cent. alum carmine. Then, after again rinsing with water, they are placed successively in eighty per cent. alcohol, absolute alcohol, and xyhol. remaining four minutes in each. The sections are then ready to mount in Canada balsam.

By the employment of the four per cent. aqueous formalin solution, the difficulties otherwise incident to the management and study of frozen preparations (such as shrivelling, friability, falling out of important parts of tissue rich in cells, and imperfect translucency) are done away with at a single stroke. The formalin hardens the sections and gives the desired toughness without shrinking.

Specimens prepared according to Pick's technique render for diagnostic purposes very satisfactory service—for example, in the diagnosis of neoplasms, inflammations, and erosions. Although treated with but one stain, the alum carmine, the sections show in the different tissues different shades of color, so that in point of distinctness they are hardly inferior to the more elaborately and tediously prepared electively stained specimens. The preparations are so durable that they may be kept for years.

The most appreciated service of diagnostic curettement, as was stated, consists in the distinguishing of benign from malignant conditions. In benign diseases we find the normal elements of the endometrium, intercellular substance, connective-tissue cells of round and fusiform shape, and glands with a single layer of epithelium.

Abortus is characterized by the large decidua cells and the general spongy structure, the sponginess being due to the presence of the large lymph spaces. Absence of connective tissue or epithelial infiltration of the same, metamorphosis of the cylindrical epithelium of the glands, the presence of giant cells or of other complex elements and the appearance of cancer pearls, the concentrically arranged masses of flat epithelium, indicate malignancy.

Veit has said that in rendering an opinion, for example, to the surgeon who has sent for examination a piece of tissue, one of three expressions may be chosen—benign, doubtful, or malignant.

Every man who approaches the examination of curetted matter must lay it upon his conscience to strive to give consistently one of these opinions. If the opinion be that it is malignant, then clinical evidence must help to locate the point of origin and the extension of the malignant disease. The method described serves only for qualitative diagnosis. After the microscopist's positive answer, "malignancy," it become the duty of the surgeon to remove all the involved tissue, is this still be possible. The opinion "doubtful" means the procuring of new material

for examination and further clinical observations. The diagnosis "doubtful" will be given, however, by a careful pathologist only after all of the accessible material for examination has been exhausted. The diagnosis "benign" is given when the normal characteristic tissue elements of the endometrium and underlying structures are preserved. It is to be remembered that it is the duty of him who takes the tissue from the uterus for examination to see that it comes from the most malignant or suspicious spot, since the pathologist can only answer for that tissue which he has examined.

Some information may be gathered from examination of the curetted matter in the gross specimen. Color, consistence, odor, quantity, and the character of the surface should all be recorded. The cellular composition of the tissue, however, and its deviations from the normal, cannot be accurately determined without the microscope.

No intelligent examination of curetted specimens is possible without a thorough understanding of the histology of the standard of comparison, the normal uterine mucosa; therefore the following salient histologic facts must be borne prominently in mind: The cervical mucosa is covered with delicate cylindrical epithelium. The surface is thrown into inundations. Indigitations of this mucosa from the crypts and glands, some acinous, some bottle shaped, all lined with beautiful decorative epithelium. A third variety of glands, the tubular glands, are single or double, or sometimes branching like deer antlers. The epithelium in these glands is tall and narrow. Upon the surface mucosa the cells are somewhat shorter. The nuclei occupy a basal position and take up the aniline dyes greedily. After the menopause the mucosa here is somewhat less corrugated, and many of the gland-forming indigitations are obliterated by occlusion of the neck, the cavity of the gland persisting as a cyst. The point of union of this cylindrical epithelium with the flat epithelium of the vaginal portio varies with age, but in ripe sexual life it generally occurs at the orificium externum. The so-called pitcher-shaped cells, which are sometimes counted among the normal elements of the cervical mucosa, represent pathologic metamorphosis of the ordinary cervical epithelium and are not to be considered as normal cells.

The mucosa of the corpus uteri presents a more smooth surface, covered everywhere with a single layer of shorter epithelium. The cells here are almost cuboid. The nucleus is oval in contour and occupies the middle of the cell. The glands of the corpus penetrate almost to the muscularis. They are like those of the cervix, except perhaps more worm-like and turtuous. The mucosa of both corpus and cervix lies upon a connective-tissue stroma in which the blood vessels and nerves ramify. The connective-tissue cells are round or fusiform, with great nuclei almost filling the cell bodies.

The round connective-tissue cells resemble lymph corpuscles, which resemblance has led to the designation of this stroma as lymphoid tissue. The intercellular substance is made up of a homogeneous material containing delicate fibres. During menstruation this stroma is markedly edematous. The muscularis is made up of smooth muscle tissue.

The pathologic deviations from this normal structure which diagnostic curettage may reveal may be enumerated as follows: endometritis interstitialis, endometritis decidualis, remnants of abortion, endometritis tuberculosa, endometritis gonorrhoica, endometritis glandularis glandular polypi, adenoma benignum, adenoma malignum, carcinoma, adenoma carcinomatosum, carcinoma adenomatodes, sarcoma, deciduoma malignum, and echinococcus. Not every endometrial pathologic condition is included in this list. Mention of some is ommitted because the contraindicate curettement—for example, endometritis acuta septica; and of others—for example, endometritis dysmenorrhoica, hemorrhagica, and exfoliativa—because they present in examination of fragments no distinguishing peculiarities.

The characteristic changes in interstitial endometritis take place in the stroma, in the subepithelial layer. We find in this condition the connective tissue cells increased in number and the stroma infiltrated with leucocytes. The acute form may terminate by resorption of the round-celled infiltration (*restitutio ad integrum*); or may become chronic, in which case the glands of this layer are compressed out of existence, the connective-tissue elements are increased, the round connective-tissue cells metamorphosing to the spindle form, and instead of the loose reticulated subepithelial layer we find nothing between epithelium and muscularis but quite dense connective tissue, through which are sprinkled a few glands. In time this connective-tissue layer may become thinner and still more cicatrical or cirrhotic. This is the endometritis of old age, or endometritis interstitialis atrophicans.

Decidual endometritis is always found after an abortion in the early months. The spaces between the large decidua cells show infiltration with polymorphonuclear leucocytes. The diagnosis of remnants of abortion may be made upon the discovery of the chorionic epithelium, the inner layer of which is made up of cuboidal cells, the outer of a homogeneous line of protoplasm dotted with nuclei. This outer layer is known as the syncytium, The interior of a villus is made up of mucoid tissue and is richly supplied with blood vessels. It is not hard to recognize these villi in the curetted mass, as the finger-like prolongations of vascular mucoid tissue covered with the two layers of cells are unlike any other structures.

Diagnosis of tuberculosis of the endometrium is practically impossible without curettement. The usual symptoms—disturbed menstruation, discharge, and enlargement of the uterus—are quite inconstant, and a certain diagnosis can be made only by microscopic examination of curetted matter or exercised fragments. The typical tubercles, consisting of giant cells surrounded by epithelioid cells and lymphocytes, are most in evidence in the superficial layers of the stroma, immediately under a pale but inact layer of epithelium. Uterine tuberculosis generally begins high up in the fundus and secondary to a tuberculous tube—a fact to be borne in mind in removing the tissue for examination.

Endometritis gonorrhoica is easily diagnosticated, since its specific germ will be stained with the rest of the section. Its unusual size, its coffee-bean form, and its intercellular grouping are characteristic.

In endometritis glandularis or hyperplastic endometritis, sometimes ridiculously called fungoid endometritis, the investigator finds upon examination a symmetrical hyperplasia of all parts of the mucous membrane. The glands are always increased in number and dilated, as during menstruation. The glands in many cases may be regarded as the sole cause of the hypertrophy of the membrane. In some preparations they are not only dilated, but also elongated. The cross, slanting, and longitudinal sections of these glands fill the field encompassed by the lens. The arrangement of the glands is always typical.

If a circumscribed area of mucosa is much thickened by glandular hyperplasia, we speak of the thickening as a polyp. Now, if this polyp assume proportions entitling it to the dignity of a place among the neoplasms, we speak of it as a benign adenoma, or an adenoma benignum. In a section of adenoma benignum and glandular polyp we discover, therefore, practically the same changes from the normal as in glandular endometritis, all representing simple overgrowths of normal gland tissue, the only difference of kind being that in the last named there is more copious round-celled infiltration. In the case of adenoma maligum an atypical growth of glands is present. The gland lumina wind about in a turtuous, fish-worm-like manner, anastomosing everywhere. In the case of adenoma benignum we distinctly see the basement membrane of each gland supporting a ring of intact epithelium. The single layer of epithelium can be traced from any given point of beginning around the wall of the gland tubule and back to the starting point. If in the adonema malignum we were to attempt to follow the cross-section ring of the epithelial lining of any gland, tubular or acinous, the eye would be led curling, zig-zagging all over the field, for the reason that the gland lumina anastomose very freely and irregularly.

The adenoma malignum presents a maze of gland cavities lined with several layers of cells. The epithelium is also polymorphous and quite unlike the clean-cut cells of the benign adenoma.

In the case of carcinomaof the uterine mucosa we may find the well-known "figura typica" of carcinoma, showing the thin or thick connective-tissue septa—thin if the carcinoma be medullary, thick if it be scirrhous—these septa enclosing alveoli in which are scattered the polymorphous epithelium cells. In carcinoma which has developed from the flat epithelium of the portio vaginalis, we encounter the finger-like prolongations of flat cells dipping down between the papillæ of the epidermis like covering of the vaginal portio and invading connective-tissue structures in which epithelium does not belong. We will be sure of our diagnosis of flat-celled portio carcinoma if we find the little bodies so familar to all students of pathology—the concentrically arranged clumps of flat epithelial cells, the cancer pearls or cancer onions. The peculiar hyaline cells, which closely resemble budding yeast forms or blastomycetæ, and which Roncali, Sanfelice, Park, and others regard as the etiologic parasites of cancer, may be brought to light by the more or less complicated staining methods developed for this purpose by the investigators named. It remains to be proved, however, that

these structureless bodies do not represent mere degeneration of classical cancer cells. There is reason to believe that the significance which the Italians have placed upon the presence of these bodies in tumors will be lost, as was the case with the various cocci, bacilli, gregarinæ, coccidia, hematozoa, and amebosporidia which have been presented at different times as the specific etiologic parasites of tumors.

The "figura typica" of carcinoma of the corporeal or cervical mucosa and the cancer pearls of flat-celled uterine carcinoma will not escape the detection of the pathologist of even small experience. They are discoverable in the very early stages of the disease, when there is still hope that surgery can save life. What may be done in the way of microscopic diagnosis of uterine carcinoma has been perhaps fairly exemplified in the laboratory of Professor Orth, in Göttingen, where in twenty years some 2,300 specimens from suspected cancer of the uterus have been examined, with error in diagnosis in only three instances. In the language of Roswell Park, " What this all means to a given patient may be easily left to the imagination."

If in a neoplasm, the tissue of which is mostly that of the adenoma, a focus is found which is undergoing true carcinomatous degeneration, or where the alveolar " figura typica " is demonstrable, the growth is denominated an adenoma carcinomatosum.

It sometimes happens that the polymorphous epithelium which almost entirely fills the alveoli in carcinoma may be removed from the centre of a few of the cavities by necrosis or by mechanical violence ; and because of the resemblance to the gland tissue which this dropping-out of the central epithelium of the alveoli imparts to the carcinoma picture, we speak of such a cancer as a carcinoma adenomatodes.

The diagnosis of sarcoma is difficult to frame from simple examination of curetted fragments ; the simple small round celled sarcoma presents a picture so much like that of granulation tissue that it is sometimes impossible to differentiate the one from the other The perfectly alveolated sarcoma likewise cannot be distinguished from carcinoma.

If, however, we meet a growth made up for the most part of fusiform connective-tissue cells or giant cells, or both, we may be almost certain of the diagnosis sarcoma. Clinical evidence is, as a rule, more valuable than microscopic disclosure in pointing out uterine sarcoma, yet many times the microscope has given early diagnosis when the clinical manifestations had not made appearance, as was true in the following well-known case : In the clinic of Professor Landau, in Berlin, a patient was recently anesthetized for the purpose of making a celiamyomectomy. During the course of the operation the uterus was curetted. The professor removed some granular, brittle material of suspicious appearance, which was handed to Dr. Pick for examination. Dr. Pick examined the material by his rapid method and found the microscopic picture of deciduoma malignum, and the uterus was extirpated forthwith under the same anesthesia, This deciduoma malignum is a peculiar malignant neoplasm of the uterus, described first a few years ago by Sänger. It appears during or immediately following pregnancy. It has been

regarded as a growth from the decidus, partaking of the character of both sarcoma and carcinoma, and has been designated as deciduoma malignum Its place in pathology, however, is not quite certain. Later investigations have indicated that it is not a neoplasm of the decidua, but of the chorionic villi, and that the syncytium, or the outer of the two layers of epithelial cells which cover the chorion, presents the soil from which it grows. Being developed from epithelium, and composed of maternal cells from the syncytial layer and of fetal cells from the inner of the two layers of villous epithelium (Langhan's cells), and merely accidentally enveloping a few decidual cells, being therefore an epithelial growth, it should be regarded as a carcinoma and not as a sarcoma. Without pregnancy the neoplasm is not possible. The presence of ribbons of homogeneous matter dotted with nuclei, or, in other words, the presence of syncytial cells, is characteristic of the syncytioma malignum, deciduoma malignum, or cherio-carcinoma, as it has been variously called.

In curetted matter from a uterus harboring the echinococcus there can be found the peculiar vesicles and hooks and sucinic acid.

It is probable that a method of examination like diagnostic curettage, which demands of the examiner somewhat more than usual care in the technique of curettement and in the use of the microscope, will not be universally applied; nor need we be hypercritical if, after application of the method by a skillful man, some uncertainties of diagnosis still remain. It may still be said with truth that of all clinically undiagnosticated cases the majority may be elucidated with the microscope by one who regularly embraces every opportunity to examine the normal and diseased endometrium. The practice which one receives in examining normal and mildly pathologic conditions will certainly be of great service when one is called to investigate obscure conditions. The diagnostic curettement is not more than an auxiliary to clinic and anatomic diagnosis; therefore, he who takes the tissue from the living woman for examination, as well as he who uses the microscope, must have mastered the other and more universally powerful means of diagnosis. The gynecologist and the gynecologic pathologist should, if possible, be represented by one man.

In the language of G. Veit, the pathologic anatomy of the organs peculiar to women is not playfully inserted into the text books of gynecology, A man cannot be regarded as a gynecologist because he knows enough to insert his finger into the vagina or apply through the speculum this or that remedy. It cannot be denied that if he would meet the universal demand he must be competent to grasp the knife and operate at at least as well as the general surgeon; and, just so, if any gynecologist would be regarded as something more than a routinist, he must know the pathology of the organs with which he deals, at least as well as the general pathologist.—*Journal of Obstetrics.*

CHRISTIAN SCIENCE DEMONSTRATION WITH COMMENTS,

BY J. H. R., TORONTO.

Boy Ran Over by a Wagon and was not Hurt.

"A neighbour came running in and exclaimed, 'Oh! Mrs. George, I wish you would treat Freddy, he has been run over by a large wagon loaded with stone, and he is in great pain.' I at once realized how impossible it was for God's spiritual idea to be run over or injured in any way. I quickly but calmly *finished my work*, and dressed myself, declaring the truth all the time. When I reached their home the mother told me he had stopped crying in a very few minutes after she entered the house and was sleeping. On awakening there was nothing the matter with him.

Query 1. Did such never happen before?

Query 2. Have not children been run over by wagons and trollies and been *killed*? Oh! I see—they were not "God's Spiritual Ideas," their parents were not Christian Scientists. That explains.

Query 3. No, I am wrong "Gods' spiritual idea" *cannot* be ever run over.

Query 4. Then Freddy's mother must have told "a high attenuation of truth."

Lame Hen Cured.

"I am a little girl 12 years old, I treated a sick hen once of being lame, by our little prayer and the Lord's prayer. She kept getting better every day, and at last she was healed. —*Washington News*, May 31, 1899.

Frog Cut Open, Healed by Christian Science.

"A boy in the street found a frog and cut him open with a rusty knife so that his lungs were exposed. A boy named Herbert in C.S.S.S. got some cotton and laid it in it. *He talked* Christian Science to it at times. He kept it up next day and evening, the third day it hopped away."—*Washington News*, May 31, 1899.

Woman treated by Ch. Sc. for three months not cured of anything. Reading S. & H. cured her.

A woman had toothache, dyspepsia, *Brights disease for 25 years.*—In fact her whole "cistem" was out of order. Tried everything—heard of Ch Sc.; took *a treatment*; that night slept; bought S. & H. and says, 'I have not taken a dose of medicine from that day." "Well," some may say, "If I had all these things healed I would believe in Ch. Sc. too." "My friend, I took three month's treatment, paid weekly, and at the expiration of that time *was not cured of one thing.* I took the case in my own hands."

Moral.—Buy Sc. & H.; that will cure everything.

Ch. Sc. healers are no more good than N. Y. ward heelers.

Climate has no Intelligence.

Woman—from childhood had been full of disease—tried everything—no good. "I then went west, but soon found climate had no intelligence."

Finger cut—did not even bleed—next day was healed.

"An adjustable chair fell down, taking a piece out of my little finger *clear down to the bone.* It *did* not bleed at all. The next morning it was all healed over." None but those who believe that "locomotion does not depend on material organization," will believe that. (S. & H., p. 251.)

Fracture of the forearm.

After two years—all right.

What a wonderful, nay, miraculous, cure by Ch. Sc! The woman goes on to say—"I was a Presbyterian for over twenty years, but I never realized what religion and the love of God was until I came into Ch. Sc. *Now* I am trusting in truth; I can see how I can love my neighbors and my enemies."

What surgeon, I would ask, has not seen many cases of fracture of the arm which have quite recovered after *two years*, without the aid of Ch. Sc.?

Twenty years a Presbyterian and yet had to learn the Truth and see how she could love her neighbour and her enemies from Ch. Sc.!

Child mortification had set in.

"A child lay at the point of death—a scientist entered the room—the child began to improve *at once*, though mortification had set in."

Tell that to the marines, also Ch. Scientists.

16. Ch. Sc. Journal, Sept., p. 426.

This is a puzzler:

A woman—says she had "kidney complaint during a period of 25 years, until it reached Bright's disease in its most aggravated form. Then eyesight failed and I had to use glasses. Used doctor's, patent medicines, and home remedies. Several times I was raised, as if by miracle, from what seemed to be a bed of death." This was before she took to Ch. Sc., however.

Boy shot—bullet lodged in nose—after 8 months dropped out—Ch. Sc. cured him.

27. "A boy, while out hunting with a small rifle, was shot in the mouth while blowing the smoke out of the barrel of the gun. The bullet penetrated the roof of the mouth.

"About 8 months have elapsed since the accident, and the boy has suffered intensely at times."

The boy was put under C. S. treatment—eight days after the bullet fell down, the boy coughed and out came the bullet.

Observations.—1. There was a gun and a bullet—the gun was discharged—the bullet went through the roof of the boy's mouth, and after 8 months dropped out.

Querry. If the boy had been a Ch. Sc. boy, would "denial" of any of these *facts* have prevented the bullet from dropping out?

2 Q. What had Ch. Sc. to do with the dropping out?

"Casting out a dumb Devil."

31. A young man was stricken with paralysis one Monday morning. The following Thursday Ch. Sc. was called for. During this time the man had not spoken, and lay motionless on the bed Two physicians had been in attendance, but from the first had utterly failed to reach the case. After the treatment " (i.e., looking at the man and arguing mentally and silently) the healer went up to the bed and said, 'I know you are better.' *He opened his eyes, looked* up, *and* replied, 'You *have been casting out a dumb devil.*' Truth had done its work, and *while the patient was unconscious and knew nothing* of Ch. Sc., he felt the power of the *spoken* word, (this is contrary to Mrs. Eddy's 'instructions') and realized that the dumb devil had been cast out."

Querry. How did the young man *know that he* had not spoken if he was " unconscious "? A man in that condition would not even know anything which had transpired.

The young man was right. They had been "casting out a dumb devil." The young rascal

Woman tried to read S. & H. Could not understand a word.

42. Woman—dyspepsia for 6 years—seems to have bought S. & H., but does not say so. "*I tried to read the book, but found,* to my disappointment, *I could scarcely* understand a sentence, and after *struggling* through the first chapter, laid it aside." Went to a healer—in 8 weeks was well, "*and* able to read the book." (Ch. Sc. Sentinel, May 25, '99.)

Bridge of nose broken—lecture—nose wriggled—nose all right.

43. "Eight or more years ago, the bridge of my nose was broken—*the lower part of the nose could be moved.*" He went to a lecture on Ch. Sc. "For some days this passage of Scripture kept recurring to my attention: 'I shall be satisfied, *when I awake, with thy likeness*;' when finally settled for the night, *the bridge of my nose seemed to wriggle.* No possible volition of mine could move it without hands. When I awoke the nose was all right." (Ch. S. Sentinel, July 13, '99.)

Man hurled 20 feet by an iron wedge flying up, hitting him on side of head—not hurt.

44. Man struck while hewing logs in the woods. "He had an iron wedge *under* his side of the log, and in some way it *flew up,* and struck him on the side of the head, *landing* him *some twenty feet away*!" Was unconscious—carried home—Ch. Scientist sent for. "*About* the time the Ch. Sc. *received* word, he fell into a quiet sleep—at noon he was able to eat a hearty dinner." (Ch. Sc. Sentinel, July 13, '99.)

Telegram sent—baby healed.

45 "Several months ago I *received* a telegram from a *distant* part of this State, to treat a 2½ year old baby for flux. *Just one hour after I received* the telegram, baby was healed and at her play" (Ch. Sc. Sentinel, April 6, '99.)

TORONTO CLINICAL SOCIETY.

The first meeting of the year—the fifty-fifth regular meeting of the above society was held in the Society's parlors, St. George's Hall, Elm St. on Wednesday evening, the 4th day of Oct. at 8.30 p.m.

In the unavoidable absence of the President, Dr. George A. Bingham, the Vice-President, Dr. W. H. B. Aikins occupied the chair.

Fellows present: Geoffrey Boyd; W. H. B. Aikins; F. LeM. Grasett; J. A. Temple; G. S. Ryerson; Fred. Fenton; H. J. Hamilton; A. A. Small Graham Chambers; G. W. Badgerow; E. F. King; J. O. Orr; A. A. Macdonald; Allen Baines; Adam Wright: A. J. Harrington; W. B Thistle; Charles O'Reilly; H. B. Anderson; W. H. Pepler; K. McIlwraith; H. A. Bruce; G. Silverthorn, and George Elliott.

Nominations for membership: Dr. D. J. Gibb Wishart by Drs. Elliott and Pepler.

Dr. J. A. Temple drew the attention of the society to the fact that this was the first meeting since the death of one of the Fellows, the late lamented Dr. J. E. Graham, and moved that the following committee be appointed to draft a letter of sympathy to the widow and family of the deceased member: Drs. Grasett, Ryerson, Baines, Macdonald and Temple. Carried.

Dr. Boyd announced at the time of the death of Dr. Graham that, on instructions received from the president of the society, he had then written a letter of sympathy to the family.

The use of Peptones in Typhoid Fever.

Dr. Fred. Fenton read a paper with this title and reported the results obtained with this plan of treatment in two cases. The first case was that of a man aged 21 years, a patient in the T. G. H. in 1892. The patient had just passed through a severe attack when a relapse supervened. There were high temperature, low muttering delirium and uncontrollable vomiting which was a very marked feature of the case The pulse was almost imperceptible, and the patient had a tendency to slip down into the bed. Swallowing became difficult or almost impossible and it was then decided to feed the patient per rectum. Ten hard-boiled eggs (the whites alone) were finely minced and mixed with milk and peptonized, and this quantity was administered every 24 hours, about a pint being used every four hours. When the rectum became irritable, liquor opii sedativus was employed. The patient got no nourishment by the mouth for nine days, and during that time he put on flesh. The disease terminated in about three weeks, the patient even putting on flesh during the period of fever.

The second case was that of a boy of about 11 years. This was also a very severe case and it was impossible to get him to take more than a few ounces of milk per day. He developed a troublesome hacking cough a few days after admission and there was marked consolidation of the base of the right lung, with attacks of cyanosis. He developed pneumonia, which condition was also present in the first case. Nutrient enemata—

were ordered for him every four hours, the mixture being peptonized some hours before being given. After this, there were no more attacks of cyanosis and there was considerable improvement. Both the whites and the yolks of the eggs were used in preparing the mixture in the latter case. To digest the milk in the first case, pepsin and HC_1 were used ; in the latter, pancreatin. The pepsin and HC_1 mass was better than the other, because in the boy the rectum became very irritable quickly, so that it had to be washed out in order to ensure the enema being retained.

Dr. W. B. Thistle in discussing the paper stated that he has not had much experience with nutrient enemata in typhoid fever, because he has not had cases in which they could not be fed by the mouth. He favors the employment of the peptogenic milk powder in preparing the milk for ordinary feeding in typhoid cases. Here you get the peptonized milk and you also get the excess of sugar and he thinks this much better than the ordinary peptonized milk.

Drs. Baines, O'Reilly and Chambers further discussed the cases.

Microscopical Specimens.

(a) Microsporon Audonini.

(b) Trichophyton Migale—Sporon.

Dr. Graham Chambers demonstrated these specimens of the small spore and the large spore ringworm fungus under the microscope. The microsporon audonini was the cause of 70 or 80 per cent. of ringworm in the scalp of children and they never affect the surface of the body. The microsporon was not a trichopyton at all. Of the trichophyton there were two kinds, the small spore and the large spore. Some grew outside the hair and some inside. The speaker described the condition of the scalp and hairs in these cases and said that under the microscope, the large spores will be found in chains, jointed, while the small spores are never in chains. In treating cases due to the large spores, there is hope of improvement in two or three months ; but in the small spore variety, a cure will probably take you a couple of years.

Friedreich's Ataxia.

Dr. W. B. Thistle reported this case and read notes on the disease. He stated he was unable to present the patient because he lived out of town. The patient was a boy aged 10 years who was brought to the hospital on account of an attack of difficulty of walking. This was noticed from the time he was 4 years of age, and it progressively got worse. The father was healthy and never had syphilis or private disease. His mother died of phthisis and her family were free from any nervous diseases. No history of the grandparents could be obtained. The father, a German, came to this country while young and knows nothing about grandparents. The patient has two aunts, sisters of the father, and they were afflicted somewhat the same way as this boy. There is also in the family an elder brother who was afflicted in the same way. In the elder brother, the disease came on at the age of 7 years, and now at 14 years of age is quite unable to walk and has marked ataxia. As regards the previous history

of the patient, there was no difficulty at birth, and the boy was perfectly well until about 4 years of age. Then it was noticed he was somewhat uncertain in his gait and frequently stumbled while walking. The condition has increased gradually but not very rapidly. He has that peculiar lack of facial expression and holds his head on one side. One side is markedly different from the other; and at first glance, he looked somewhat like a case of birth palsy. There was no nystagmus in this case and no abnormal condition noted in the eyes. The doctor sought closely for nystagmus and did not obtain that symptom; the pupils were equal and reacted normally to light. With the eyes closed, the patient swayed and would have fallen. Speech slow and difficult, so that he stumbled over words and halted or hesitated. Sight was good; hearing quite normal. Locomotor system: had moderately marked ataxia, worse on excitement. Inco-ordination was also marked in both hands but not to the same degree as in the feet and legs. The inco-ordination was shown when he was asked to button his coat. There was no paralysis and no indication of muscular weakness. Sensory system: there was no abnormality with reference to sensation. Tactile sensation perfect for testing heat and cold and testing painful impressions, but located impression gradually. Reflexes: knee jerks; are gone absolutely on both sides; plantar also absent; cremasteric, quite normal. Nutrition: skin was healthy looking; no atrophy and no evidences of atrophic disturbance. The rectal and bladder functions were quite normal. With reference to the feet: he had the characteristic clubbing of both feet, that is, shortening of the plantar arch and condition of hammer toe, particularly noticed in the big toe. The arch of the foot was lifted very much and the ball of the great toe was approximated to the heel; and the great toe itself was flexed and stood up almost at a right angle from the dorsum of the foot. In the family history, this condition of inco-ordination coming on in this way in childhood, gradually getting worse, made it quite clear that it was ataxia of spinal type as distinct from the cerebellar type. In the cerebellar type, he would likely have had some palsy, particularly of the tongue and other muscles The lesion affects the posterior columns crossed pyramidal tracts, direct cerebellar tract, and anterior lateral tract, with the probability that it is more extensive in the posterior columns. These cases have been studied fairly well and an abundant examinations of cords made, and the pathology seems to be pretty well worked out. It is generally considered to be of the nature of a developmental defect, that is hereditary and congenital; and the occurrence of an infectious disease precipitates the occurrence of the symptoms and intensifies them. There is no reason however, in this case, to attribute anything to infectious disease. Unfortunately, there was nothing that could be done to remove the condition and the prognosis is unfortunately rather bad, that is in reference to the recovery. These patients live a long time—the longest on record being about 46 years after the appearance of the symptoms; but sometimes the condition becomes extreme in a very short time and the patient may last only two years. This is the shortest period; very likely to last between 15 and 30 years. The prognosis as to length of life is not good. Coming on at 4 years of age, it would not be likely that he would

live much after twenty. Then there is the off-chance, that the condition might become stationary ; this has been noticed in these cases. They may become stationary for long periods and then they may take on further development. Intelligence does not suffer much, but in the later stage the intellectual functions do become somewhat impaired ; but in this boy's case he was quite bright, perhaps more than ordinarily so. There are several conditions which might easily be mistaken for Friedreich's ataxia, if you do not have a very clear family history ; but in this case with a brother and two aunts afflicted, there was no difficulty in the diagnosis. But if the case had come under observation during the advanced period it would be rather difficult to distinguish it from ataxic paraplegia and this affects about the same regions as ataxic paraplegia. However, in ataxic paraplegia you are very likely to have some involvement of the sphincters and involvement of the sensory functions. There is now a case in ward five at the Toronto General Hospital, who has difficulty in speech. There are no eye symptoms ; but marked ataxia and increase of the reflexes instead of loss as in this case. Cerebellar tumor might look like the cerebellar type of Friedreich's disease, but in addition you would get the constant headache and vomiting ; and the duration of the condition is very much shorter than cerebellar tumor. Primary lateral selerosis occurs also as a congenital defect. That condition occurs also in early life and would have a very close resemblance to Friedreich's disease ; however, if you had the nystagmus present, it would be strongly in favor of Friedreich's disease. In primary lateral selerosis, there is a more spastic condition, without so much inco-ordination. It is easily distinguished from the birth palsies, because you have marked cerebellar symptoms there.

Dr. H. J. Hamilton asked Dr. Thistle whether there was any tendency whatever to swaying movements of the head or any scoliosis present, as Dr. Thistle had spoken of the tendency of the head to lie upon one shoulder.

Dr. Thistle : There was no rotatory movement. You do get that in the cerebellar form, but this was a typical spinal type. There was no scoliosis whatever.

Fracture of Femur.

Dr. A. J. Harrington exhibited a fractured femur from an old lady of 76 years as the result of a slight injury. In a scuffle she was shoved over and struck her thigh on a hat-rack and then fell on the floor. It showed the great friability that these bones possess at this time of life, and it is really wonderful with that extreme condition, how she could walk about with the bone in such a weak state. Delirium had set in on the second day and she died thirteen days afterwards.

Refreshments were served ; then adjournment.

GEORGE ELLIOTT,
Recording Secretary.

Outline of the proposed plan for the economic treatment of pauper inebriates, with suggestions with regard to some of the details.

The appointment of an Inspector by the Government who might be called "Inspector of Hospitals."

2. The Inspector, under the authority of the Provincial Secretary, will organize cottage hospitals where practicable and will confer with hospital authorities with a view of organizing an inebriate department in the general hospitals of Ontario.

3. In organizing either cottage hospitals or inebriate department in general hospitals he will visit the locality and make all the arrangements neccessary, including, (a) making arrangements with hospital trustees and hospital staff for the reception and treatment of patients, (b) conferring with the Mayor and city authorities, firstly, with regard to an extra per diem rate for city patients, and secondly, with regard to giving employment on public works to men subsequent to treatment, thirdly, with regard to making a grant to help pay a local agent. He will also confer with local philanthropic societies with regard to the appointment of a local agent, who, it may be suggested, might be either a truancy agent, an agent of the Childrens' Aid Society or an officer of the Y.M.C.A. The duties of the local agent will be firstly, to induce inebriates to undergo treatment, secondly, to visit and encourage them while under treatment, thirdly, to make provision for their employment, and fourthly, to endeavor to change their environment and to place them in a higher plane of life and living.

4. The Government should make a grant to cover the following expenses: (a) salary of inspector, (b) office expenses of inspector, (c) travelling expenses of inspector, (d) grant for aiding discharged inebriate patients. This grant should be disbursed either by an inspector or by the Prisoners' Aid Association and the amount for each hospital should be determined by the amount contributed locally for the same purpose, and the Government grant should in no case exceed the amount contributed by the former.

5. The Government should formulate the terms upon which aid should be granted to hospitals to promote the treatment of inebriates. This grant should be given only when all the conditions are complied with. One might suggest the following: Namely, for the first ten days, twenty cents a day extra; for the second ten days, ten cents a day extra; subsequent time, the ordinary hospital per capita grant.

6. The conditions upon which extra per capita grant should be made to hospitals are suggested as follows: (a) the hospital to provide a reception ward altogether apart from other patients and where they should be detained for a few days before being admitted to the hospital wards proper; (b) medical treatment to be arranged between the inspector and the medical superintendent; (c) all cases shall be reported to the inspector on reception and the report shall be according to a special form designed for this purpose; (d) the hospital authorities shall co-operate in every possible way in the work of reformation of inebriates both during and subsequent to treatment in the hospital.

7. It may become necessary to extend the Inebriate Act of Ontario to include general hospitals so that patients may be compulsorily detained when necessary.

8. In dealing with police cases, it might be well in many cases, instead of sending the inebriate to the hospital direct, to have the man

remanded by the magistrate for a week, and in the meantime afford him an opportunity, in the county jail, of recovering from his last debauch. At the end of the week the magistrate could give the man the option of either going to jail for a month at hard labor or of entering the hospital for two or three weeks for treatment. In the latter case the co-operation and sympathy of the police magistrate and the jail surgeon should be secured, if possible, in behalf of this reformatory effort.

9. According to a careful estimate fully 30% of inebriates receiving medical treatment and having a helping hand extended subsequent to treatment (as above outlined) may be restored to society. If not more than one half of this number can be reformed, the effort will surely not have been in vain.

10. It is also suggested that it be made a criminal offence to offer intoxicating liquors to a person who is known to have received treatment for inebriety at public expense.

Approved by the Toronto Medical So.

(Sgd.) D. GILBERT GORDON,

October 24th, 1899. President.

THE TREATMENT OF PRURITUS.

In treating pruritus it should be remembered that it may be both primary and secondary. In the primary cases it is simply due to some local irritation of the skin; in the secondary cases it arises from Bright's disease, jaundice, diabetes, acid dyspepsia, and similar conditions. Pruritus can also be divded into generalized itching and local itching. The generalized form often comes on periodically, and its onset is often produced by disturbance, of the emotions, severe intellectual disturbances, marked alterations in diet, sudden variations in temperature, and particularly the development of heat of the skin when the patient gets into a warm bed after undress-ing in a cold room.

Besides these forms we also have that generalized form of pruritus which is seen in old persons, and apparently depends upon malnutrition of the skin and upon gouty tendencies. In the way of localized pruritus we have that form which invades the neighborhood of the anus and is most frequently aroused at night, affecting often the coccyx and scrotum, and often aggravated by the presence of hemorrhoids.

In women we frequently have pruritus of the vulva produced by pregnancy, the menopause, and local irritation. Pruritus of the prepuce in males is often due to the passage of the diabetic urine. Very rarely indeed pruritus of the palms and plantar surface is met with. This affection, although rare, is usually persistent.

In making a diagnosis of pruritus it must be remembered that anal pruritus may be due to the presence of seat-worms, and that itching of the skin in other portions of the body may be due to various parasites, such as pediculi and scabies.

The treament of pruritus depends very much upon the condition which produces it. In cases of jaundice, the use of phosphate of sodium and similar substances will often be advantageous. Dietetics will perhaps do the most good in cases of diabetic pruritus; taking care of the skin and the use of diuretic drugs may be of advantage in cases of renal disease.

As rule in diabetic cases, articles capable of undergoing fermentation in the alimentary canal should be avoided, particularly rich, greasy foods, and only small quantities of alcohol should be allowed, the patient living largely on green vegetables and roast and broiled meats. In many instances, particularly in those of gouty tendency, weak alkaline mineral water may be employed with advantage. Internally a prescription such as the following may be used to allay nervous irritation :

Valerianate of ammonia, 30 grains ;
Tincture of valerian, 2 drachms ;
Peppermint water, 3 ounces.

Two teaspoonfuls of this in a wineglassful of infusion of chamomile flower may be given three times a day.

In other instances where there seems to be intestinal fermentation a pill composed of carbolic acid 1 grain, extract of valerian 4 grains, given three times a day, may be useful.

Locally the treatment should consist in hot douches applied daily for the period of a minute, particularly over the vertebral column. In other instances full baths in which almond meal or starch-water has been added may be employed with advantage. In still other cases the addition of a quart of vinegar to the bath may be useful ; and in still others the parts may be locally enveloped in a cloth wet in an infusion of cocoa leaves in the strength of one per cent. In the way of sedative lotions the following may be employed :

Carbolic acid, 15 grains ;
Glycerin, 1 ounce ;
Water, 3 ounces.

Or,

Vinegar, 1 ounce ;
Hot water, 3 ounces.

Or,

Hydrate of chloral, 30 grains ;
Glycerin,
Alcohol, of each 3 drachms ;
Water, 3 ounces.

In other cases hot water alone is of advantage, and finally may be used a lotion composed of

Corrosive sublimate, 2 grains ;
Alcohol,
Cherry-laurel water, of each 1 drachm ;
Water, 3 ounces.

In the way of ointments the following are useful :

Menthol, 15 grains ;
Vaselin, 3 ounces ;
Carbolic acid, 15 grains ;
Oxide of zinc, 2 drachms.

Or,

Talc,
Oxide of zinc, of each 1 drachm ;
Powdered camphor, 15 grains ;
Vaselin, 3 ounces.

In some cases a dusting powder may be useful, as for example :

Talc, 2 ounces ;
Subnitrate of bismuth, 2 ounces ;
Oxide of zinc, ½ ounce ;
Powdered camphor, 30 grains.

Orthoform has been employed in powder or ointment in some of these cases with temporary benefit, but it sometimes causes local irritation of the skin.

In some instances the application of the continuous galvanic current to the skin is of advantage, the positive pole being placed over the itching part and the negative pole at some distant point.

In very malignant cases good results have followed linear scarifications or the use of superficial cauterization with the thermocautery or with the electrocautery.

Of course, these methods are only useful in cases in which the affection is localized.—*Journal des Praticiens*, June, 1899.

CHRYSAROBIN A SPECIFIC FOR WARTS.

G. M. Fitz, in the *Boston Medical and Surgical Journal* of June 29, 1899, says that since 1895, when Dubreuilh called attention to the presence of warts on the feet, the characteristic differences between warts and corns have been more or less generally recognized. Warts on the feet are readily distinguished by their location (usually upon the plantar aspect of the foot) and by their bleeding from a central, vertical bundle of papillæ arranged like a pepper-box and ordinarily projecting somewhat above the pared surface. This central bundle of papillæ is surrounded by a thickened area of skin penetrating to a greater or less depth and an outer painful zone of inflamed skin.

In 1891 Dr. Fitz. saw for the first time a wart in this situation and attempted to cure it with salicylic acid in collodion. He found after a trial of three weeks that this was not effective. He was then led from its superficial resemblance to the lesion of psoriasis (bleeding points) to try a solution of chrysarobin in gutta-percha. The wart was thoroughly pared until there was profuse bleeding, and the solution applied to the denuded surface. The patient was directed to cut the surface every night and apply the chrysarobin. In a few days the pain disappeared, and the wart seemed diminished in size. In two weeks' time the wart was practically gone and the surface restored to its normal condition.

Since that time he has been able to apply chrysarobin in eight cases of warts similarly located. Some were apparently due to stone bruises; others to the irritation of defects in the boot; and of others, again, no history could be obtained. In one case there were three warts on the ball and two upon the heel of the same foot. Several of the cases came to him after having been treated for months by salicylic acid without success, even though the physician in charge had made the application himself each week.

In most cases the chrysarobin produced little effect before the end of the first week, except that the pain became less and the wart did not increase. In the second week change was rapid in most of the cases, although in a few cases there was still little effect. In the third week the majority were cured.

In the series of eight cases there have been no failures. Two apparent failures were traced to difficulty in paring the wart, and as soon as this was remedied by sandpapering the cure progressed favorably. On the whole, careful thinning of the surface with a sharp, fine glass-paper gives better results than paring with a knife, as the patient is less afraid of injuring himself and can more conveniently handle the paper.

Dr. Fitz's experience has been that chrysarobin may be applied either in a ten per cent. solution of the ordinary gutta percha solution or in a ten per cent. ether solution. It is best to apply the chrysarobin at night, and to advise the patient to put on an old stocking, to prevent soiling the bedc'othing. Application once a day in this way seemed ordinarily to be sufficient, but in obstinate cases it should be applied both night and morning.

The influence of the chrysarobin seems to be not only upon the keratinized portion of the skin, but also upon the proliferated blood-vessels in the papillary central part, for both disappear and true skin is formed over the surface. No scab was thrown off, but a considerable thickness of the surface was removed in each case by cutting and sand-papering.

A correspondent has reported two additional cases of cure with chrysarobin, making the total number of cases ten. The attempt to try the effect of chrysarobin on warts on other parts of the body has been possible in but one case (warts on the hand), where it had the same favorable effect.

Experiments with chrysarobin on corns show that it has practically no effect.

The claims of chrysarobin as a specific for warts may be summed up as follows:

1. Success in a series of ten cases of warts on the sole of the foot in which the diagnosis was perfectly clear.

2. Similar success in one case of warts on the hands.

3. No failure in any case where the application was made repeatedly on the denuded surface of the wart.

4. No subsequent recurrence of the wart.

THE IMPORTANCE OF THE PRESERVATION OF BODY TEMPERATURE DURING RESUSCITATION OF THE NEW-BORN CHILD.

With the exception of a faintly beating heart, the infant born asphyxiated has all its organs in a state of rest. Functional activity is almost at zero. An infant born dead will have the temperature of the mother. Lying in a room heated to 70° F. uncovered, it will lose ten degrees of temperature in fifteen minutes. Swung through the air, it will lose from twelve to fifteen degrees in as many minutes, depending somewhat upon its plumpness,

An adult exposed to cold that proves fatal is dead before any such loss of temperature prevails. Infant asphyxiation may be due to maternally administered anesthetics, or narcotics, to pressure on the head by forceps or molding, to tonic spasm of the uterus, to intracranial blood-pressure, to pressure on the cord, to shock from manipulations of the cord, to distortion of fetal attitude, and various other causes. In many of these varieties, conspicuously those of anesthesia and narcosis, voluntary resuscitation will ensue if simply the loss of animal heat is prevented for about fifteen minutes.

In a thousand cases of resuscitation the "safety point" will be reached in ten minutes with sixty per cent.; in fifteen minutes with twenty-five per cent.; in twenty minutes with ten per cent.; in twenty-five minutes with three per cent.; and the remaining two per cent. through a period of an hour and more.

So long as the fetal heart action continues resuscitation is possible, and this automatic, rhythmical action continues much longer than is generally supposed, Neugebauer reported in the *Centralblatt für Gynäkologie* of November 26, 1898 (see *Obstetrics*, January, p. 21), the continued contractions of the heart of a fourteen weeks' old embryo for three hours, pulsations occurring every two to three minutes. Opitz (see *Obstetrics*, p. 150) reported in the same journal two cases of fetus at term with the heart beating for thirty minutes, and capable of further contractions after removal under stimulation of a needle. Much longer cases of postpartum heart beating with no respirations have been reported, and no doubt many a still-born child has been laid aside as dead whose heart was still contracting. The ideal method of resuscitation will use the best combination of all aids to respiration, vascular and cardiac circulation, and equilibrium. Blood communication between child and placenta should remain unimpeded; the uterus should not be handled, unless it is bleeding; alternate compression and expansion of the chest should be achieved with freedom; insufflation should be available if required; alternate application of heat and cold, spanking, throat cleansing, etc., etc., should be ready at hand, which may include stretching of the sphincter ani, traction of the tongue, and use of the now ubiquitous electric current; but, above all, should be included the preservation of the body heat up to normal temperature.

The following method of resuscitation has been employed for over a dozen years with growing favor: A vessel one a half by two feet and six

inches deep is half filled with water, as hot as the hand can comfortably bear, and brought close enough to the mother to receive the child without causing traction on the cord. The child is held with the back of the neck resting in one hand and the posterior knee and thigh surfaces in the other. It is then immersed in the hot water, and artificial chest action secured by alternately bringing the knees and head together and apart (Dew's method), the mouth being kept above water. At intervals of ten to fifteen seconds it is dipped once in very cold water in another bowl, then immediately returned to its hot-water bath. When first placed in the hot water it will turn quite "blue," due to temporary paralysis and expansion of the skin capillaries. All other adjuvants to resuscitation can be applied with the hot-water immersion kept up practically all the time. In the asphyxia of narcosis, anesthesia and cerebral congestion, more time is given for the restoration of equilibrium in the circulation by sustaining the body temperature, and in the asphyxia of anemia (pallida) the hot baths wards off the most imminent danger—cold—and sustains the flagging heart. The cord must not be handled. We know that moderate manipulation of it *in utero* causes heart shock and death. The uterus must not be "Crédéed." If we compress the fundus we might as well sever the cord. The forman ovale may not close while the blood runs from placenta to child, nor the respiration start up promptly as our anxieties might foolishly desire; but we should not wish to have them do so, for while the mother still breathes for her child its circulation is gaining the equilibrium of its equable surroundings.

Let us condemn and do away for all time with the aerial gyrations of Schultze's method. It is spectacular, but chilling. It is resuscitating to the operator, but deadly to the fetal heart. It is efficient in lung expansion and compression, but no better than Dew's. It gives the stimulation of cold air, but prevents the use of heat, which should be used in the proportion of ten to one in favor of heat. It robs the child in its direst need of its second mother—the placenta—and must succeed promptly or fail altogether. It was conceived with an eye single to lung expansion, and reminds one in its narrowness of wisdom of the bear in the fable which was appointed to keep off the flies from his master who slept. He killed one, which had alighted upon his master's nose, with a large stone, thrown with wonderful accuracy of aim, and wondered why his master did not awake and thank him. Editorial in *Obstetrics* for June, 1899.

A PRESCRIPTION FOR A HEMOSTATIC-ANESTHETIC SOLUTION.

Legrand employs the following solution, particularly in lesions of the mouth, where it is desired to produce anesthesia and arrest small hemorrhages:

Pure gelatine, 30 grains;
Chloride of sodium, 8 grains;
Carbolic acid, 2 grains;
Hydrochlorate of eucaine B, 8 grains;
Hydrochlorate of cocaine, 2 grains;
Distilled water, 3½ ounces,

—*Journal des Praticiens*, May 13, 1899.

THE TREATMENT OF WHOOPING-COUGH.

The *Journal des Praticiens* of May 13, 1899, after pointing out the necessity that the child should live in a room at the proper temperature and have plenty of fresh air, and should be given easily digested food frequently, suggests the following internal treatment for use as soon as it is decided that the child is suffering from the disease:

Externally the chest is rubbed morning and night with a liniment composed of essence of turpentine and oil of sweet almonds, equal parts. Care must be taken that the pure turpentine is employed, and if the child's skin is irritated by it the strength should be decreased. The object is to produce slight reddening but no further irritation of the skin. It is thought that the counter irritation and the inhalation of the turpentine exercise a favorable influence upon the respiratory passages.

In regard to internal treatment, a good many remedies are employed, but nearly all of them have disadvantages. Acenite is too depressing; belladonna and codeine are too powerful, and check secretions. Antipyrin is apt to interfere with the functions of the kidneys, but inhalations of oxygen are advantageous, and bromoform is recommended by Marfan as distinctly useful. The prescription for bromoform may be as follows:

Chemically pure bromoform, 10 drops;
Alcohol (90 per cent), sufficient quantity to hold the bromoform in suspension;
Syrup of orange flowers, 1 ounce;
Simple syrup, 2 ounces.

This prescription may be given in the dose of one to five teaspoonfuls each twenty-four hours. To a child as young as six years a teaspoonful at seven in the morning, at midday, and at five at night is about the proper dose. It must be remembered that bromoform is a remedy of very great power and that it must be used with some caution.

THE TREATMENT OF DIABETES.

Guiranna (*La Clinica Medica*, An. 5, n. 19) speaks very highly of a diet of fresh vegetables in the treatment of diabetes. In bad cases he finds that much benefit is derived from an exclusive diet of fresh vegetables for a few days, but in ordinary cases a mixed diet is sufficient. The vegetables recommended are endive, cabbage, French beans, artichokes, and in general all green vegetables. Peas and beans, provided they be fresh, may be taken in small quantities (¼ kilogramme). The author also allows fruits in moderation. The only saccharine substance allowable is levulose, from 50 to 200 grains a day. Probably the reason why green vegetables are tolerated so well is because the starch is converted into levulose and not dextrose. The objection to saccharin and dulcein for sweetening is that they do not represent a food, but a foreign body, in the organism, and being of the aromatic series, and as such non-assimilable, only increase the amount, already copious enough, of waste products in the body. The author has no great faith in drugs, but thinks certain mineral waters, alkalies, massage, and baths more useful.—*British Medical Journal*, June 24, 1899.

IN MEMORY OF DR. ROLPH.

Proposal to Erect a Monument over his Grave.

A bust of the late Hon. Dr. John Rolph, has recently been placed in the Museum of the Education Department in this city. Dr. Rolph was one of the most energetic and ablest of the Reformers during the old "Family compact" days, when this meant a great struggle for years—a struggle as often apparently hopeless as it was thankless. But after many years it brought about responsible government in Canada, to which she owes her present proud position, as at once practically a self-governing nation, and a most loyal part of the great British Empire.

Dr. Rolph was also the founder of medical education in Ontario, and an abler or more zealous teacher could not be. His remains lie in Mount Pleasant cemetery without, as yet, a stone to mark the spot. It has been suggested that it would be a graceful and well-deserved tribute to his memory for his friends still living amongst the old Reformers, and the great number of medical men scattered over Canada and the States, whom he educated, to send in subscriptions for this purpose, so that a modest, yet appropriate monument might mark the spot where his dust lies.

Dr. Geikie, dean of Trinity Medical College, Toronto, would be glad to receive such contributions, and to see that the desire of those sending them was suitably carried out.

SERUM THEROPY IN CANADA IN 1863.

The Treatment of Skin Diseases.

To the Editor of the Medical Times and Gazette.

Sir,—Knowing the extensive circulation of your valuable journal, I take this opportunity of placing before the members of the Profession, through its columns, certain facts, in order that those whose province it may be to treat cutaneous diseases may have an opportunity of testing the correctness of the statements, and reporting accordingly.

Case 1.—Psoriasis Palmaris, of five year's duration, cured by Vaccination, November, 1861.—A B., aged 25 years, robust conformation of body; temperate habits; not the subject of scrofula; has had psoriasis palmaris for a period of five years, subject to occasional improvement of the disease under various methods of treatment, but never entirely free from the disease, which presented the annulated character,—red, dry, cracked and exfoliating, and extending from the wrists to the fingers. During a sojourn in the Sourthern States, the action of various alteratives, such as iodide of potassium, bichloride of mercury, iodide of iron, as well as the triple solution of mercury, iron and arsenic had been well tested. As a *derneir ressort*, I resolved upon vaccination, in order to observe the alterative effect of the vaccine virus upon his system, not without previous consideration, but with a firm conviction that under certain circumstances, vaccine introduced into the system is one of the most powerful blood purifiers we possess. The operation was successfully performed, the pustule passing through the various stages from incubation to its separation. Having carefully observed its progress, I found that, as it advanced from the third to the seventeenth day, the disease on the hands and fingers gradually receded, and on the twentieth day from the date of the vaccination, the parts recovered the natural appearance and continued so. Was successfully vaccinated when a child.

Case 2.—Tinea Nummularis seated on the right fore-arm; boy, aged 13 years, of florid complexion, vigorous habits of body, and healthy parentage. This disease existed over two months, and covered a space about two square inches near the front aspect of wrist-joint. Vaccinated on the opposite arm; operation successful. About the seventeenth day the disease disappeared, no other treatment having been adopted. Was previously vaccinated when one year old.

Case 3.—J. S., aged 25 years, a somewhat stout man, with fair skin, temperate habits, and non-scrofulous aspect. States that three months ago he had an indurated chancre, and eight weeks afterwards observed an eruption on the face, and more or less over the entire body. December 15, 1862, came under my charge, when the case was well marked "tubercula syphilitica," round, small and a copper colour, and possessing more or less density and elevation. Vaccinated on the arm successfully, and on the fourteenth day afterwards the tubercles over the whole body flattened down, and at the end of four weeks only a slight discoloration of the skin, at several points where the eruptions were worst, could be observed. From this date he went on gradually improving in general health under the influence of tonics.

Case 4.—Psoriasis Lapræformis.—S. G., aged 24 years, married, and the mother of four healthy children. July, 1862, first observed what was termed a "rash" on the elbow joints, subsequently on the knee-joint, from which points, within a period of three months, it extended more or less over the entire body, even to the roots of the hair. November, 10, 1862, I was first consulted, and placed her under the action of the usual alteratives for three weeks without any marked improvement. January 2, 1863 vaccinated successfully over a clear part of the skin on left arm. As the pustule passed through the successive stages, the eruption gradually disappeared, and the skin recovered its previously healthy aspect, about four weeks having elapsed from the date of vaccination to the disappearance of the disease *in toto.*

Various other cases illustrative of the effect which vaccine produces upon the system, as an alterative, may be cited. However, on the present occasion I consider the above cases sufficient evidence that the simple process of vaccination should not be confined alone to its protective influence against small-pox, but *also extended to the treatment of many cutaneous* diseases not of parasitic origin, but arising from irritant poison, generated in the organism or *in that vital fluid the blood.* Over such existing impurities, vaccination, beyond a doubt possesses a powerful influence. Such facts prove nothing unfavorable to the claims of vaccination as a protective agent against small-pox; they prove only that which each day's experience tends to corroborate, namely, "*that man has still much to learn.*"

Trusting that this point may merit the attention of the leading dermatologists, to whom we Canadians look forward for an expression of opinion such as can alone be formed from an enlarged experience,

I am, &c.,

JAMES A. GRANT, M.D.

Ottawa City, Capital of Canada, February 20.

(*Re-printed from The Canada Lancet, March,* 1891, *page* 221.)

INOCULATIVE TREATMENT OF TUBERCULOSIS.

The Koch treatment still continues to be a matter of interest and speculation among the members of the medical profession throughout the world The enthusiastic assurances of success, made rather upon a knowledge of the discoverer of the remedy than upon the results of its use, have, in a measure, abated, and all are waiting for tabulated results to pronounce the success or failure of the remedy. It would at present be unwise to hazard an opinion upon the matter, but the report of relapses in some of the cases of lupus are somewhat discouraging, and in the cases of pulmonary tuberculosis, the time elapsed has not yet been sufficient to state anything definite. It may reasonably be inferred that inasmuch as the remedy is an extract of the tubercle bacillus, its injection in large and repeated doses would, in certain cases, induce acute miliary tuberculosis. It has been asserted that in the event of failure of the treatment the idea

of treating diseases by inoculation of the products of bacteria is a valuable suggestion to the practical therapeutist. But this is in no sense a new idea, for in the *London Medical Times and Gazette* of March 14, 1863, Sir James A. Grant, of Ottawa, showed the possibility of *vaccination* proving curative in many forms of contagious affections, and his communication of that date forms a very interesting item in the light of the discoveries of Dr. Koch.

(*Reprinted from the Montreal Medical Journal, January*, 1891,*page* 556)

In these days when cure by injections or inoculations is attracting such widespread attention, it may be of interest to note that so far back as 1863, Dr. James Grant, of Ottawa, (now Sir James Grant), applied ordinary vaccination for the cure of skin disease. and with evidence of success. His paper on the subject may be found in the *Medical Times and Gazette, London*, for the year above mentioned. In some of the cases various remedies had been administered as alterative with apparently little benefit, but after vaccination the disease disappeared in a comparatively short time. In other cases no remedy other than the vaccination was tried and healing followed. From all the conclusion is drawn that the vaccination acted as an alterative on the nutrition. Apparently this is just what Koch's lymph does, though it would seem that it is peculiar in selecting the tissues that are the site of the specific disease.

CONSTITUTIONAL RIGHTS OF CHRISTIAN SCIENTISTS.

The relation of Christian science to the public health is one that may be fraught with consequenses of a grave character. There is no question as to the constitutional right of an individual to have his diseases treated in any manner that he sees fit. If he chooses to employ some one to sit with his back toward him and to think or pray his disease away, that is an inalienable right, guaranteed under the general provision of the constitution, which holds that any one has a right to make a fool of himself if he wants to. This, however, is subject to some restrictions, which are generally classed under the police power. Thus the law holds that every man's house is his castle, and every one is allowed the freest possible use of his own property; yet in the application of this rule the law will not permit a man to maintain upon his own premises a private conflagration or epidemic, nor will it permit him to maintain a nuisance that interferes with the free enjoyment by others of *their* property or jeopardizes *their* health. In speaking of the practice of Christian Science, Mr. Barnes, attorney for the State Board of Health, says these people will go into a room where a child lies ill with diphtheria or scarlet fever, pray for a long time, get their clothing full of the germs of contagion, and then, without any precautions, go to the sick room of some other person suffering from some other trouble. Clearly such practices are illegal and can be suppressed under the police power in the interests of the public health.

THYROID EXTRACT IN DEFECTIVE CHILDREN.

There is no more brilliant chapter in therapeutics than that which deals with the treatment of cretins. The term cretin is applied to idiocy associated with gloitre or enlargement of the thyroid glands. A later extension of the term applies it to those cases in which there is an appreciable atrophy of the gland. The relation of disorders of the thyroid to developed mental defects in children is so important that every case should be carefully investigated. Unfortunately, the means by which a diagnosis is made, the difference by which cretinism and other forms of idiocy, is by no means clear, and oftentimes it is impossible to make an accurate distinction. In all such cases it will be wise to give thyroid extract, as it is found to improve the nutrition and mental development of many defective children, even though their troubles cannot be directly traced to anomalies of the thyroid, and they cannot be clinically classed as cretins.

The thyroids should be given in the desiccated form, a fresh preparation invariably employed, and preferably in the form of capsules rather than tablets. The latter contain more than three-fifths their weight of excipient, and if strongly compressed, or if kept in stock for a considerable time, may be so hard as to pass the alimentaay tract without solution. The desiccated thyroid, given in capsules, is readily absorbed and exercises its full physiologic activity promptly after its administration. In the best preparation, one grain of the desiccated product equals about eight grains of the fresh gland stripped of its envelopes. The dose should be about two grains for a child from three to five years of age, repeated twice each day. So far as we know, the substance is devoid of deleterious effects, though its administration must be watched to see that it is not carried to the point of disturbing the heart's action.

FEIGNED ERUPTION.

The careful study of all phases of human nature, as well as disease, is generally rewarded by results. The Engman-Schwab case in our last issue is an example. It seems by persistent observation and close study of this remarkable case they were able to bring forward a new idea in feigned eruptions. This is certainly a unique case and one that will add another etiological factor to the causation of feigned eruptions, namely, that of sexual perversion, which the aforesaid gentlemen undoubtedly mean in their foot note. The latter fact it seems was gleaned from the patient at a subsequent visit to the writing of the article.

It is very probable that this fact of sexual perversion in feigned eruptions is often a factor in their production, and many cases that are relegated to the full closet of hysteria are cases of this type. Flagellation, scratching, pinching and other forms of dermal irritation are common in sexual perversion, as pointed out by Kraft-Ebing and others; therefore why should we not have in the physically abnormal other means employed to excite the sexual functions, as the production of eruptions by the use of irritative agents.

We also believe that the neurologist and the dermatologist, by their united efforts, could unravel many a knotty point in the mysterious dermato-neuroses, and we are glad to see a step forward in this direction.

The great objection to limitation to one branch of medicine is the fact that it is prone to render narrow the scientific vision of these specialists, they wrapping themselves up, as it were, in the narrow garments of their respective specialties. This is unfortunate, as these scientists should mingle freely with one another, study their cases from every standpoint, and co-operate in their work. Of course this is done to some extent, but the method of study used by Drs. Engman and Schwab should be more widely employed, and the efficacy of the results will speak for the method. —*Medical Review.*

PNEUMATIC CURE FOR BALDNESS.

There has recently been advertised a pneumatic cure for baldness This is based on the old, old theory that the loss of hair is caused by a diminished blood supply, with resulting atrophy of the hair bulbs. Positively the last thing in the treatment of this affection is what is known as a "capillary chalice." We trust that our denominational friends will not be shocked at this use of the word, but will take the broader view that is derived from the Latin *calix*, meaning a cup, and that it is only within the last dozen centuries that the word has been specifically used to designate the communion cup. Besides, to what more noble purpose could an instrument with any name be applied than in the relief of baldness, the deformity of youth, and scarcely to be borne with equanimity in old age? The mechanism of this treatment is simply the old one of cupping. The chalice is nothing but a hollow rubber pad from which the air can be exhausted, and in this way the circulation of the scalp stimulated so as to produce healthy hair follicles and stimulate the normal growth of the hair. We are left in no doubt as to the efficacy of the treatment, for the advertisement of the company selling the instrument contains a number of illustrations of "before" and "after" treatment. A number of men are shown with remarkably smooth pates, and later we see the same heads covered with hair that would be the envy of any barber in the land. We are informed that the "chalice" does not aim to produce a perfect vacuum, which, of course, nature abhors, but that it is only a partial one. We are gratified at this conservatism on the part of the makers of the cup, because a perfect vacuum might result in the loss of a portion of the scalp, and there would be little hope of restoration, as even with this method of stimulating the circulation it could hardly be hoped that the denuded cranium could produce a luxuriant growth of hair.

EPITOME OF CURRENT MEDICAL LITERATURE.

BACTERIOLOGY AND HYGIENE.

Contribution to Our Knowledge of the Spontaneous Milk Coagulation.

Y. KOZAI* concludes his researches on this subject as follows: 1. The lactic acid formed in spontaneously coagulated milk is either pure dexto-lactic acid or inactive lactic acid, or a mixture of both of them. 2. The appearance of the one or of the other form is determined by the temperature; at room-temperature, usually pure dextro-lactic acid; at the temperature of the incubator, inactive acid is formed. 3. The causative agents of these phenomena are three distinct bacteria: Bacillus acidi paralactici, bac. acidi levo-lactici and micrococcus acidi paralactici liquefaciens Halensis. The first and the third furnish dextro lactic acid; the second, levo-lactic acid. 4. The most frequent and important form is bacillus acidi paralactici, not identical with Heuppe's bacillus acidi lactici. 5. At ordinary temperature the fermentation of milk is mainly caused by bacillus acidi paralactici. At higher temperatures the two other forms combine in their action with it. 6. The production of inactive lactic acid in spontaneously coagulated milk is not caused by the combined activity of other bacteria and of the dextro-lactic acid formers, but only by the simultaneous activity of the bacillus acidi levo-lactici. 7. The general and particular conditions under which these three forms of lactic-acid producers live have no influence on the nature of acid formed by each of them.

The Climatology of Nudity; Light, Heat, Atmosphere.

W. D. ROBINSON.† Though the use of direct sunlight on the diseased human body is advancing, some of the otherwise best papers on the subject of tuberculosis are defective in not giving special accent to sunlight, while pure air and altitude are largely dwelt upon. Without light these fail, while with light they succeed in curing this disease in its earlier stages. A theory of light now generally accepted is that it is identical with electricity. Knowing what we do of electricity, we can more readily comprehend and theorize as to the probable action of light on our bodies in health and disease. Can it not be that the rash in measles, scarlet fever, and erysipelas is nature's effort toward securing light, energy, and effective oxygen compounds in the blood in the greatest quantities? Quinine in solution, as it must be in the blood, absorbs ultra-violet and violet waves of light and speedily emits them in colors. Can quinine carrying light thus bring death to the malarial plasmodium and destruction to its

*Zeitschrift fur Hygiene u. Infectionskrankheiten, Vol. 31, No. 2.

† Phila. Med. Jour., August 26, 1899.

toxins? As to the skin itself, its muscular, fat and connective tissue substance are all too deficient and defective for our greatest welfare and comfort. By excessive covering peripheral nerves are too intensely impressed by caloric changes, the capillary blood system too feebly and incompletely developed to battle most successfully with heat disease and traumatic impressions. All its functional powers have been reduced. The trend should be toward development of the skin rather than toward the employment of substitutes which supplant it in function.

The Etiology of Scarlet Fever.

W. J. CLASS,* from the results of experiments in cultivating scales, throat secretions, and blood from scarlet fever patients, reaches the conclusion that he has found the specific causative factor of the disease. The germ is a diplococcus, polymorphous in character, but resembling, as ordinary seen in slides made from fresh cultures, a very large gonococcus. The biscuit-shaped appearance is best seen in specimens that have been lightly stained. With a watery solution of methylene blue very pretty pictures were obtained; carbol fuchsin and Bismarck-brown also stain the germ. They are discolored by Gram's stain, though not to the same extent as the gonococcus. The culture medium in glycerin agar-agar, to which about five per cent. by weight of black garden earth has been added, the medium being rendered sterile by discontinuous heating. The biological characters, control experiments and pathogenesis are fully given, together with some of the differential points between this germ and similar organisms that have here been found in the skin and naso-pharnyx.

EYE, EAR, NOSE AND THROAT.

Is the so-called American Voice due to Catarrhal or other Pathological Conditions of the Nose?

J. W. FARLOW† thinks that it is the exaggerated nasal quality, the production of the voice in the nose, the twang, which is the most noticeable characteristic, and that we can omit consideration of the larynx and fauces as factors. In a general way, he believes that the condition of the nose is not the important factor in determining this nasal voice. In many cases the manner of speaking can be improved without medical or surgical treatment of the nose, even though some defects or abnormal conditions are present in the anterior nares. Examples are cited of marked improvement in the voice after a course of exercises in the proper manner of placing and raising the voice and upon mere removal from the society of companions who spoke in a nasal voice. The anterior obstructions in the nose are common in all civilized races, and there is no reason for thinking that any peculiarity in the American voice is due to what is possessed by others equally with

* N. Y. Med. Rec., Sept. 2, 1899.

† N. Y. Med. Jour., Sept. 2, 1899.

ourselves. In our old country villages the voices of the natives are well known to have the nasal twang without regard to the condition of the inside of their noses. The parts of our country where are the oldest centers of civilization and education should be the places where most attention is paid to the singing and the speaking voice, and this is probably the case. Training of the voice, especially in childhood, will do more to improve speech than treatment of the nose.

The use of Gelato-Glycerine Bougies in the treatment of Earache.

G. L. RICHARDS * claims great benefit from the use of gelato-glycerine bougies, which are prepared after the following formula:

℞ Acid carbol ..... ℥ vij.
Ext. opii fluid ..... ℥ vj.
Cocain ..... gr. iij.
Atropin sulphat ..... gr. iij.
Aquæ ..... ℥ lij.
Gelatin ..... gr. xviij.
Glycerin ..... gr. clviij.
M. Int. Cap. No. XLII.

In size, they should be no larger than will readily slip into the external canal. There is no doubt that if the bougies are used early enough paracentesis will often be obviated.

The treatment of Hay Fever.

B. DOUGLAS † divides hay fever cases into two grand divisions—those who have nasal lesions and those who have none. The times of suffering are about the same, the severity of the symptoms is equal, the sequelæ are alike, and the difference is mainly one of condition of the nasal cavities. The cases in which there are no discoverable nasal lesions are in the minority. The treatment is considered under four different divisions, to wit: 1. A treatment of the cause; (a) local irritant, (b) vicarious elimination, (c) vasomotor sensitiveness, (d) neurasthenic conditions, (e) uric-acid diathesis. 2. A treatment of the attack; (a) local, (b) general. 3. A treatment of general syptoms. Quinine and Warburg's tincture. 4. A treatment between the attacks. The local desiderata in the office treatment are: 1, to cleanse the membrane of irritating pollen or mucous and pus; 2, to relieve the hypersensitiveness of the over-irritated nerves; 3, to restore the tone of the over-distended blood-vessels and cause their shrinking and the shrinking of the mucous membrane. The home treatment of the local condition should be directed to keeping down the irritation, restoring the blood-vessel tone, and protecting the nasal membrane. The constitutional treatment of the attack consists of preventing the vasomotor dilatation and combating the unfavorable general symptoms. We may expect to

* Laryngoscope, August, 1899.
† N. Y. Med. Jour., Sept. 2, 1899.

cure the majority of patients permanently of attacks of hay fever by surgical work on the nasal interior. When heredity plays a role in causation, the cure is hopeless, although in these cases the attack may be rendered less severe.

INTERNAL MEDICINE.

About the Genesis of the Proteins in Albuminuria.

According to M. CLOETTA,* in cases of albuminuria mainly three kinds of proteins are found in the urine: serumalbumin, serumglobulin, and nucleoalbumin, the proportions of which vary considerably in the single cases. The author tried to determine the conditions, why in one urine much and in another only little globulin and nucleoalbumin are found. By means of comparative investigations of the blood serum and of the urine of eclamptic and nephritic rabbits he could show that the percentage of albumin and globulin in the serum is not of any influence on the proportions of these substances in the urine. By means of membranes of varying permeability, Cloetta demonstrated that more porous membranes allowed the transfusion of much albumin together with much globulin, while in case of less porous membranes little or no globulin goes through. Correspondingly he found in artificial nephritis in rabbits during the period of restitution little globulin or none at all. The nucleoalbumin originates in the kidneys and its occurrence in the urine demonstrates an extensive disintegration of tubular parenchyma.

Subcutaneous Rupture of the Intestines.

H. C. KEENAO† divides the forces producing rupture into two classes: Sudden, sharp blows, as kicks or heavy objects thrown; this causes about 70 per cent. of all ruptures; and heavy lacerating forces, as being caught between buffers of cars or run over by wagons; this causes 30 per cent. The first class produces a single tear, while the heavy force produces usually more than one tear, and generally separation of the torn ends. The portions of intestine most frequently injured are the upper end of the jejunum near the duodenum, and the lower end of the ileum near the colon—places where a movable portion of gut is attached to one more fixed. A bruise to the gut may result, or the blood supply separated from a part so that it becomes grangrenous, and perforation occurs as late as six days after the original accident. The principal symptoms occurring early are shock, abdominal pain—either localized or general—vomiting—possibly of blood—local tenderness, rigidity of the abdominal wall and absence of liver-dullness. The later symptoms usually found are constipation, absence of flatus, retention of urine, thirst, anxiety and restlessness, tympanitis, tenesmus, vomiting, and symptoms directly due to peritonitis. The value of early diagnosis cannot be over estimated. The life of the patient depends upon a diagnosis of his condition before peritonitis has developed. The best plan to follow is to operate rather on the history than to wait for a certain diagnosis.

* Archiv für experimentelle Pathologie und Pharmcologie, Vol. 42, Nos. 5 and 6.

† Phila. Med. Jour., September 2, 1899.

Experimental Researches about the Nature of the Tophi in Gout.

In order to decide the question, whether the deposits of urates in the tophi form the primary lesion, or whether they are (according to Ebstein and others) secondarily deposited in the injured necrotic tissue, FREUDWEILER* made numerous injections of sodium biurate. He could demonstrate that the deposit used acts injuriously on the tissue, leading to an extensive reactionary inflammation. The inflammatory foci thus produced experimentally differ histologically in no way from the tophi. Based on these results Freudweiler does not believe it probable that the uric acid deposition is preceded by a tissue necrosis; he agrees with the explanation first given by Garrod, that the tissue lesions are caused by the deposition of urates.

A Case of Intrauterine Epidemic Cerebro Spinal Meningitis.

R. B. H. GRADWOHL† reports a case of a woman of 31 years, who died of cerebro-spinal meningitis; she was seven months pregnant. At the necropsy typical meningitis was found on opening the cranium, there was great injection of the piaarachnoid and an abundant purulent exudation scattered here and there over the entire meningeal surfaces, particularly at the base. The same condition was found upon the cord. An exact counterpart of the condition of the maternal meninges was found in the fetus, with perhaps more of a sero-purulent than a purely purulent exudation, as found in the mother. Bacteriologic examination of fluid from both the maternal and fetal meninges revealed the presence of the diplococcus intracellularis meningitidis. Pathologically the meninges exhibited about the same condition of inflammation and degeneration, such as is found in epidemic cerebro-spinal meningitidis. In whatever way the specific micro-organism may gain access to the fetal tissues from the mother, it can be said that in a disease like typhoid, or epidemic cerebro-spinal meningitis there must surely be some selective affinity on the part of the micro-organism for some tissues.

A Case of Fibrinous Peritonitis in a Child two and a half years old.

CUMSTON and HASTINGS ‡ One month before the child was brought to the dispensary it suffered from an attack of diarrhea, which lasted for several weeks. After this attack the mother noticed the child's abdomen was swollen, but otherwise it presented no symptoms. At the first examination no positive diagnosis was made, but it was thought to be a case of indigestion, so frequently accompanying dentition. A few days later the child had not improved, but the treatment, which consisted of calomel 1-10 gr. twice daily, was continued. After an examination some days later the diagnosis of fibrinous tubercular peritonitis was made The entire lower half of the abdomen gave a complete percussion dull.

* Deutsches Archiv für klinische Medicin, 63, Nos. 3 and 4.
† Phila. Med. Jour., Sept., 2, 1899.
‡ Medicine, September, 1899.

ness. The child was operated upon twice, and in both cases the bowel was perforated. The second operation was made for the purpose of closing the fisula, as a result of the first one. The child survived about five weeks. The autopsy revealed a complete absence of fluid in the abdominal cavity, but the lower half of the parietal peritoneum was covered by a layer of fibrinous exudate, at least half a centimeter in thickness. Coils of intestine were embedded in his and could not be detached without rupturing, which accounts for the two unsuccessful operations. From the cecum to the transverse colon a number of ulcerations were found, and also a small ulceration at end of appendix, which would certainly have perforated in a short time. A few tubercles were found scattered over the parietal peritoneum, and the kidneys presented a few miliary tubercles in their cortices and some amyloid change. The other viscera appeared perfectly normal.

A Case of Colocynth Poisoning.

W. E. JENNINGS* reports a case occurring in a woman 29 years old. An improvised tincture was swallowed, with a view of producing abortion. One hour afterwards, faintness, giddiness; vomiting, retching, and pain in the epigastrum developed. Three hours after taking the drug there was a large, watery, blood-tinged stool, and shortly afterwards a convulsion. Vomiting and retching, delirium, epigastric pain and blood-stained evacuations from the bowels, were the prominent symptoms for three days. Abdominal pain then developed. with a continuation of the passage of bloody stools, but improvement in the general condition. There was no rise of temperature at any time, though the pulse respiration ratio was much disturbed for several days. Medication consisted of morphine and atropine, hypodermically, for three days, together with a mixture containing bismuth subnitrate, cocaine hydrochloride and lime water; fomentations were applied to the epigastrium and abdomen. Abortion did not occur.

Periosteal Caries From Bacterial Origin.

M. H. FLETCHER† reports three cases, in which severe paroxysmal pains, resembling tic douloureux, was found to originate in an abnormal condition of the periosteum of the jaw. In the first case a large pocket was found reaching from the alveolar ridge to the inferior border of the jaw; the surface of the bone had the feel of being eburnated and without periosteum. Similar conditions were found in the other cases. Recovery followed after sterilization of the pockets with escharotics. If a suitable culture of bacteria or cocci has been started in the bony-like fibres of the periosteum, they can produce continuous destruction of the membrane. The study of the periosteum shows it to be a very compact membrane of connective tissue fibres, and, histologically, much more of the nature of the hard tissues than of the soft. In one of its layers it carries arterioles in great numbers, but having very few, if any, capillaries anywhere in its substance,

*N. Y. Med. Jour., September 2, 1899.
†Jour. Am. M. A., September 2, 1899.

and no blood-vessels as all in one of its layers. It therefore seems rational to hold that this membrane can and does form a good pabulum for the growth of bacteria, and this to its own destruction. The exceedingly slow recovery of these cases, under germicidal and stimulating treatment, would also tend to support the hypothesis of the death of the periosteum by bacteria. Similar conditions, in cases of amputation or compound fracture, may be the cause of the persistent pain so often complained of. In lesions of the peritoneum, whether traumatic or otherwise, regardless of what bone of the body it may be on, progressive destruction of that membrane could occur, as in these cases of tic douloureux.

Hydrotherapy in the treatment of Insomnia.

HANCE.* In cases afflicted with neurasthenia, and especially insomnia, the author suggests special attention to the environments of the patient, his diet, exercise, bowels, digestion, etc. This being done, the most satisfactory therapeutic measures for producing normal sleep is the employment of the bath and static electricity. He reports a number of pronounced cases of insomnia cured by the use of the hot-air bath, a needle spray, a jet douche along the spine, and the application of electricity each evening before retiring. By this means the cutaneous circulation is improved, the secretory organs stimulated, and the nervous system toned up.

Demonstration of Tubercle Bacilli in the Feces.

ROSENBLATT.† In pronounced cases of tuberculosis of the intestines the feces are almost invariably fluid. As a result, the bacilli are thoroughly mixed with the stools and are found with the greatest difficulty. The author, through the use of tincture of opium, produces hard well-formed stools. On the surface of the scybalæ, especially in the muco-purulent particles, the bacilli are usually found without any difficulty. The hard scybalæ in passing over the ulcer carries with it, on its surface, the bacilli.

OBSTETRICS AND GYNECOLOGY.

Prophylaxis of Uterine Cancer.

W. W. GRANT.‡ The only safe course in all cases of injury to the cervix is to repair every appreciable lesion without waiting and looking for evidence of either benign or malignant disease. It is the only certain way to anticipate, with reasonable assurance, a constant danger to the lives of many women. Regardless of the existence of a cervical lesion, the necessity for unusual vigilance and care as a preparation for and during the climacteric must be conceded. The influence of a persistent, chronic irritant in ultimately causing malignant disease is well known. Trachelorrhaphy should be early performed to remove all cicatricial and diseased

*Therapeutic Gazette, July 15, 1899.
†Centralblatt für innere Medicine, July 22, 1899.

tissue; if there is a predisposition to malignant action, cicatricial tissue invites it; if there is no such tendency, it often excites it. The operation for laceration of the cervix should be performed before the climacteric is concluded if no indication exists for it during the child-bearing period.

Conservative Operatjve Treatment of Chronic Puerperal Inversion of the Uterus.

The case reported by J. BARELIUS* is a most interesting one. After repeated and various attempts to replace the uterus he was obliged to resort to the operative method which is original with him. An incision was made through the posterior vaginal wall and with one finger in the uterus an unsuccessful attempt at reposition made; then the incision was carried through os and neck, but with no better success. Finally, however, after the posterior uterine wall had been divided clear to the fundus, the organ could be returned to its original position. The patient was well and at work in just one month from date of the operation.

Movable Kidney.

HALSTEAD,† after reviewing the various theories as to the causation of movable kidney, concludes that the principal factor, as well as the explanation of its frequency in the female sex, is to be found in the variations from the normal configuration of the paravertebral fossa. The frequency of movable kidney on the right side is explained by the shallowness of the right fossa as compared with the left. Fixation of the kidney should be done in all cases, when, after a fair trial of the palliative measures, the symptoms still persist; immediately in all cases where the occupation or habits of the patient precludes the possibility of benefit being derived from the abdominal supports. In these cases no time should be lost in temporizing, but operative treatment resorted to at once.

Gangrenous Mastitis.

H. ROGER and M. GARNIER† report the following case: Patient, 17 years old, was delivered on March 1st of a full term baby, which died two days later. On the 7th of March she complained of general malaise and sore throat, and two days afterward a typical scarlatinal eruption appeared all over her body. She was then admitted to the hospital, and in addition it was found that her left breast was greatly swollen, of an intense red color, specially marked on the interior and inferior parts. Here there were two circular ulcers, the largest one the size of a silver dollar, the other one-half that size. The floors of the ulcers were of a grayish color, gangrenous, and covered with pus. Borders were red and undermined. A very abundant and very fetid discharge was present. Around the areola there were developed a number

† Medicine, September, 1899.
‡Jour. Amer. Med. Assn., September 2, 1899.
*Centralblatt für Gynakologie, July 29, 1899.

of small ulcers of the same character. The gland itself was swollen and very painful to the touch, especially around the interior and inferior portions. Wet dressing applied constantly did not modify the process at all, and the smell of the discharge soon became gangrenous. Under appropriate treatment patient recovered from the attack of scarlatina; but the process around the breast continued, and the ulcerations became blackish in color. Finally a large piece of mortified tissue, including part of the gland, came away. From this time on patient began to improve, and was discharged cured in three weeks. In the pus many microbes, that seemed to belong to two different species, were found. The more numerous one was a micrococcus perfectly rounded in shape, generally found by itself, sometimes associated in pairs; rarely three were united together. This micrococcus was easily stained by methyl blue, but was not discolored by Gram's method. It was free in the fluid, and was not found inside of the leucocytes. Besides this microbe there were some streptococci, although in very small number, while the microscopic field was covered by the micrococcus; one, or at most two, streptococci could be found. Cultures of the micrococcus presented the following features: ordinary bouillon became turbid throughout. At the bottom of the tube there was a more or less abundant deposit that at the least agitation spread itself all over the tube. In the first cultures the bouillon had a peculiar putrid smell, like the one noticed in the patient, but this disappeared in the later cultures. The reaction of the bouillon remained alkaline. In sweetened media the microbe did not develop as well. Bouillon with glucose, lactose and glycerine was used. In the first, the culture was not as abundant as in simple bouillon; but it became turbid throughout. In the second, the development was very slow; liquid remained clear, but is turbid at the bottom. In the third one turbidity is slightly marked. In agar the microbe forms small round, fine colonies; they appear like grains of sand. Milk is rapidly coagulated by it, and becomes acid in reaction. In potatoes the cultures developed very slowly; a white line appeared all along the place of inoculation. Rabbits inoculated with this microbe developed serious suppurative lesions.

The Use of Protargol Instead of Silver Nitrate in Crede's Instillation.

Dr. Engelmann* employed in 100 new-born infants protargol, in a 20 per cent. solution, and found it to be superior to nitrate of silver, by the complete absence of irritative action and by its reliable bactericidal effect; while according to Cramer the instillation of nitrate of silver caused in 90 per cent. more or less a profuse secretion (lasting sometimes five days), 80 per cent. of the protargol cases did not show any or only a very moderate (one to one-and-a-half days) secretion. Even through the absence of secondary catarrh the results prove to be very favorable.

*Centralblatt für Gynaekologie, 1899. No. 30.

†La Presse Medicale, July 22, 1899.

Interstitial Pregnancy with Report of a Case Operated upon Thirteen Months after Conception.

MacLaren † Interstitial pregnancy, as the statistics show, is a rare thing, and to find one that has gone to full term is indeed rare. The case presented is one of a lady 30 years of age, primipara. During the first three months of pregnancy history was negative; no unusual symptoms being present. Patient was suddenly taken with a pain in lower abdomen; slight collapse, with nausea, vomiting, and a slight hemorrhage from vagina. From this time on there was a progressive enlargement of the abdomen which was marked in the earlier months on the right side. There was no attempted labor until over ten months after the last menstruation. Pains were regular and quite severe for about eight hours. About three days after this missed labor the fetal movements ceased. After one month there was a decrease in size of abdomen, and descent of uterus. It was now nearly thirteen months and patient was commencing to show signs of exhaustion. Bougie could only be passed about four inches when it was met by a solid obstruction. Laparotomy was performed and a gangrenous twelve-pound, perfectly-developed child was delivered. Placenta was hard and leathery and so strongly adherent that it could not be removed. After forty-eight hours bovine was used upon the placenta with the best possible results. Upon examination of sac, muscle fibres were detected and a free opening into the upper part of the true uterine cavity was demonstrated.

ANTIPYRIN IN THE TREATMENT OF CHOREA.

This treatment was first urged by Eskridge, and it has met with a considerable degree of success. His method of giving it was to begin with a dose of one grain for each year of the child's age. This was to be increased a grain each day until the movements ceased. In severe cases the child was kept in bed, and in those less marked it was allowed to be about the fore part of the day. After the movements ceased the antipyrin was suspended and iron or arsenic or both substituted. Antipyrin used in this way undoubtedly gives a large proportion of successes, but it is to be remembered that this is true of any form of treatment, as mild cases naturally tend toward recovery. It is difficult to say whether this form of treatment would cure in a less time than that by simple arsenic or other method of treatment; in other words, does it have any distinct advantages? Only a prolonged statistic study of a large number of cases would enable us to say positively that it did. There is no question that it and the arsenic treatment, and possibly the quinine treatment, somewhat lessens the duration of the disease, particularly if it is combined with rest and such hygienic and dietetic measures as tend to the building up of the general nervous system.

†Amer. Gynec. and Obstet. Jour., August, 1899.

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EDITORIAL.

THE ROLE OF INSECTS AS CARRIERS, IN THE SPREAD OF BACTERIAL AND INFECTIOUS DISEASES, IN MAN AND ANIMALS.

In the last number of the Johns Hopkins' Hospital Reports, Dr H. F. Nuttall contributes a critical and historical study on this subject, reviewing the rather meagre literature, and showing that many of the opinions commonly held are based on insufficient and unsatisfactory data. He then gives the results of his own experimental work, and the brilliant researches conducted by Manson, Ross, Smith and others. Particularly in reference to the causation of anthrax, by the bites of flies infected from animals dead of the disease, has there been a great deal of assumption and theorizing, with little actual observation or experimental proof. Too much credence has been placed on the statements of patients infected with anthrax, who have attributed the subjective stinging sensations at the seat of infection, to the bite of an insect. Nuttall's own experiments go to show that while insects, feeding on the bodies of animals dead of anthrax, may take the bacilli into their bodies and retain them in a virulent form for some time, their *bites* do not produce infection in susceptible animals. Crushing of the infected insect on the body, however, may produce infection in a wound already existing.

In Plague, Cholera and Typhoid fever, flies and other insects feeding on dead bodies or on infected excreta, take the virulent germs into their alimentary canals, and so may contaminate food used for human consumption, thus indirectly spreading the disease. The practical application of these facts in reference to the careful disposal of dead bodies and excreta, as well as to the care required in the protection of food, is of the greatest importance in prophylaxis.

In Tuberculosis and Yellow fever, insects have not been proven to play any role, and in Leprosy their importance is doubtful.

Fleas and dog lice have been shown to contain the larval stage of Taenia Cucumerina, the adult worm being found in dogs, cats and other animals and occasionally in man.

In lower animals, the Texas fever of cattle has been conclusively proven by Smith and Kilborne to be due to an infective agent, carried by the Cattle-tick, and inoculated into animals by their bites.

Bruce and others have proved that the ravages among both domestic and wild animals in certain parts of central and southern Africa, destroying large numbers each year, are due to a haematozoon, inoculated by the bite of the Tsetse fly.

Coming to the mosquito, the role played by this insect in the filarial infections of the tropics, has been so well worked out by Manson, as merely to require mention.

Of more recent date and of even greater interest to us, are the investigations of Surg.-Maj. Ronald Ross and others, as to the relationship of the mosquito to the etiology of Malaria. The common people in different countries have long believed mosquitoes to be the carriers of this disease, and again Science substantiates the truth of a widely diffused common opinion. This theory was first mentioned in 1883 by King, an American, who brought forward strong proof to sustain his idea. It was lost sight of for a number of years until new interest was awakened in it by the investigation of Manson, Koch, Laveran, Pfeiffer, Grassi, and particularly Ross. The mosquital origin of malaria fits in with, and explains many conditions long known to be associated with the disease, as damp climates, low altitudes, wet seasons, recent turning of the soil, and greater liability to acquire the disease at night. It also explains the protection afforded by the wearing of mosquito nets, the comparative freedom of towns from the disease, and its disappearance following proper drainage. Only a few species of mosquito appear able serve as the intermediate host of the Malarial parasite, which Ross has traced into their stomachs and studied, after they had been fed on the blood of malarial patients. The immature parasites afterwards enter the salivary glands of the mosquito, thus explaining how the *bites* of the insect produce infection in man. As prophylatic measures against Malaria, would be included all the means that can be used to destroy the mosquito or their breeding grounds, and means to prevent being bitten by them.

It is hard to appreciate the far-reaching importance of these discoveries when applied to the prevention of disease and to the reclaiming of large fertile areas of the globe, now rendered uninhabitable owing to the prevalence of virulent forms of Malaria.

The discoveries of the important role played by insects as carriers of disease, will take rank with the most brilliant advances made in medicine during the closing years of a century that has revolutionized the art, and placed it on a scientific foundation. The great general interest awakened by these discoveries is shown by the fact that both the British and American Governments have now scientific commissions abroad following up the investigations, and supplying them liberally with the necessary funds.

PERSONAL.

Dr. Ernest Hall, late of Victoria, B. C., has removed to Vancouver.

We are pleased to learn that Dr. Cavan is convalescing rapidly from a recent attack of typhoid and will resume work soon.

Dr. Geikie returned last month after spending the summer in Europe. The doctor, from this out, will devote his attention to college work and consultations.

Sir. Jos. Grant, of Ottawa, was the guest of Dr. Murphy, of Chicago and delivered an address at the University of Chicago and also to the Medical Society of Chicago. The banquet given Dr. Grant at the Auditorium was attended by many of the leading physicians and Surgeons of the city.

THE POST-GRADUATE SOCIETY OF TORONTO.

A meeting of this Society was held in the House Surgeons' Quarters Toronto General Hospital, on Wednesday evening, Oct. 18, for reorganization. The following officers were elected:—

Honorary Pres.....Dr. H. B. Anderson.
" Vice-Pres.....Dr. H. A. Bruce.
President.....Dr. A. D. Stewart.
Vice-President.....Dr. Colin A. Campbell.
Secretary.....Dr. H. C. Wrinch.
Pathological Committee..Dr. C. A. Page and Dr. A. W. Tanner.

This Society was organized a year ago, at the suggestion and by the efforts of the late Dr. J. E. Graham, for the purpose of stimulating clinical and pathological research among the House Surgeons of the hospitals in Toronto, and the recent graduates working in the laboratories of the city. Dr. Graham was selected first Honorary President, and had the satisfaction of seeing the Society in successful operation before his death.

A good representation of members was present at the initial meeting is year, and much interest manifested in arranging the programme of work.

THE UPLAND OR ROCKY MOUNTAIN CLIMATE OF CANADA.

In quite a number of incipient cases of consumption, not so far advanced in the disease as to need more than a constant outdoor life and need not incur the expense of residence in a Sanitarium, which seems to be mainly for providing an outdoor life, the climate of the upland region about Calgary, McLeod and Lethbridge, and particularly the district about Maple Creek offers tempting inducements. especially for men; while many women too, accompanied by a male friend, may make arrangements for an outdoor life there. Of this region, the Secretary of the Provincial Board of Health, Dr. Bryce, says:—Whatever the physiological explanation, it is certain that the effects of the climatic qualities already mentioned are to so promote nutrition and reconstruction of tissue that tuberculous cattle transported thereto from the lower levels and moister climates of old Canada have rapidly regained flesh, and remained for years in seemingly perfect health, while many a consumptive has found that in this climate his disease has been stayed, and recovery in not a few instances has taken place. Probably no better illustration of the peculiarly health-giving qualities of the climate could be given than the remark recently made by a traveller: "that it was no wonder the Calgary ranchers are jubilant over their commercial prospects, for not only are they obtaining exceptionally good prices, *but their milch cows seem to grow as big as oxen!*" In the occupations of outdoor life, such as that on the great ranches, rather than in those of the towns, are we to look for such benefits to the sick as we have a right to expect from this climate of the foothills. Once let the invalid so improve as to be able to ride his broncho over these measureless plains, and enjoy the exercise in breathing the rarefied and oxonized air of absolute purity, and his recovery is almost assured. And it is just as certain, and he ought to know it, in order that the cure be permanent, that continued residence in the climate for perhaps many years is essential. And indeed in few places can existence become a more real pleasure than in this life of perfect freedom, removed far from the exacting conventionalities of society, and in touch with nature in her ever-changing moods.

Then there is the Mountain Sanitarium at Banff, an admirable institution for those who prefer it or can afford to take this course.

ABSTRACTS.

Acute Nephritis in Children.

Dupeu (*Jour. de Med.*) has collected a large number of cases of acute nephritis in children. He finds that the effection is in reality more common than is supposed, but, fortunately, the disease is much more hopeful in its prognosis than in adults. The author looks upon measles as a more frequent cause than is supposed by some authors, for it is definitely stated by some that it is extremely rare in this condition. Irritation and absorption from the skin would seem to be a cause of acute nephritis; thus, blistering, the application of turpentine, carbolic acid, etc., may produce nephritis, and it has been known to follow burns, severe electrization, too hot baths, and inflammatory conditions, as eczema, erysipelas, impetigo. Chicken-pox has also been observed to cause nephritis, as first pointed out by Henoch. Others consider it exceptional, but the author quotes Descroizille as stating that the most frequent complication of varicella is nephritis. These cases all seem to terminate favorably. Post-vaccinial nephritis is also described, and acute inflammation of the kidney may even follow tonsillitis, and a case is quoted in which a re-current tonsillitis was always accompanied by acute nephritis. Lastly, the author states that nephritis may be the result of ordinary gastro-intestnal intoxication, more particularly when there is dilatation of the stomach. This has been observed in children as young as eleven to sixteen months old fed by the bottle, and in whom vomiting and diarrhea were prominent symptoms. In these cases there is very marked abnormal fermentation taking place with the production of more or less toxic products, which, when absorbed, are competent to produce nephritis. The duration of these varies from two to four weeks, and may be accompanied by all the usual signs of Bright's disease.—*Archives of Pediatrics.*

Gonorrhoeal Salpingitis.

Taylor (*The Scalpel*) has found that many women suffering from tubal disease have at some time been exposed to the infection of syphilis, as well as gonorrhœa. These cases show, as a rule, marked improvement after a prolonged course of mercury and iodides; it is usually the case that the gross physical signs of the disease will slowly and permanently disappear. More than that, many cases in which there is no history of syphilis,, but undoubted evidence of gonorrhœa get entirely well under the same treatment. Cases of pyosalpinx, whenever possible, should be treated by free incision of the posterior vaginal fornix, by thorough exploration and emptying of all pus-cavities from the pouch of Douglas, and by iodoform gauze drainage This is far preferable to the older operation of removal of the appendages which is not only much more dangerous, but is peculiarly liable to be followed by fæcal fistula, an operation sequel sometimes worse than death itself. Such cases of mixed inflection and acute suppuration treated by operative evacuation of the pus with or without removal of the appendages, do sometimes not only recover but remain permanently well without further treatment, the acuteness of the information appearing to terminate the process of infec-

tion. In other cases, recovery is not so complete or relapses are met with, and these case should be followed up by a course of specific treatment, the beneficial result of this being often immediately manifest when the wound tissues are unhealthy and the healing is delayed.—*The Med. Stand.*

Alcohol as an Antiseptic.

Two papers, that of Braatz (of Königsberg), and that of Sänger (of Krefeld), remind us of the great difference between the theoretic and the practical value of alcohol as a medium for rendering the hands—surgically clean. Both refer to the fact that alcohol is, in the test tube, only a feeble germicide at best, but neither attempts to explain why it is, that we obtain better results through its use. Sänger maintains, that absolute alcohol fails to destroy the staphylococcus aureus in 20 minutes, and he found, furthermore, that its germicidal power increased with dilution until 40 per cent. was reached. Still, at that strength, it does not, with absolute certainty, kill the above mentioned germs. The critic gives these gentlemen little credit for originality in this matter, for Minervini taught us substantially the same thing years ago, although the results of the latter differed from those just quoted. He found alcohol most powerful in 50 to 70 per cent, dilution. The various chemicals, when dissolved in alcohol, have considerably less effect upon germs, he affirms, than have acqueous solutions of the same strength. He could demonstrate further, that boiling in alcohol was the more effective the more water it contained. Thus Minervini was the first to show us, that the school to which we have pinned our faith, can scarcely be dignified by the name of antiseptic. The instructive point in Sanger's article is, that certain disinfections antagonize each other, viz., the effect of a carbolic solution, used upon the hands after alcohol, is much less than that of alcohol alone. His results with carbolic acid, dissolved in alcohol, were practically the same as those which I have quoted from Minervini, in his use of the different chemical antiseptics. Sänger says, that of all chemicals, chlorine is the most powerful disinfectant. To make the use of the same practicable, he applies a 2 to 5 per cent. solution of hydrochloric acid for two minutes, than ½ to 2 per cent. solution of potassium permanganate for one minute. The brown discoloration of the skin is removed in a few seconds, by the use of sulphurus acid. In this way, he brings about the liberation of nascent chlorine, oxygen and sulphuric acid, and insures a disinfection which is, he concludes, not to be attained by any other method. What the effect upon the skin might be, we are only left to surmise.—*Courier of Medicine.*

Carcinoma of the Larynx Following Syphilis of that Organ.

In a paper presented to the Seventieth Reunion of German Naturalists and Physicians, Dr. Keimer reports two cases of cancer of the larynx consecutive to syphilis. The first patient was under treatment for tertiary manifestations on the side of the nose and in the naso-pharynx. He followed the treatment in a very irregular fashion and never ceased to make an excessive use of tobacco and alcohol. One day he presented himself with a hoarse voice. There was found a smooth swelling of a

reddish-yellow color on the right aryteno-epiglottidean fold adjacent to the epiglottis and entrance to the larynx. The whole resembled a gumma. Potassium iodide was again prescribed, with rest for the larynx. After some time the voice was more clear and the symptoms was considerably lessened. Some time subsequently a small ulcer of the right pyriform sinus and the posterior wall of the larynx was found. The patient was still irregular in obeying instructions and drank and smoked to excess. The ulcer enlarged. commmenced to proliferate and assumed the aspect of a growth. Potassium iodide produced no more effect. A first microscopical examination yielded no result, but later the disease was shown to be cancerous. An operation could not be immediately performed and when it became possible there was failure in removing the entire larynx. The patient died three weeks later from an infectious bronchitis.

The second case resembled the first in all points, The treatment was interrupted, there was abuse of tobacco and alcohol, an immoderate strain upon the voice. The patient declined operation.

The author does not think that any relationship between tertiary syphilis and carcinoma should be predicated from these two cases. MM. Hopmann, Flatau and Heymann were of the same opinion. M. Lieven, on the contrary, believed that the cases illustrated the occasional appearance of cancer in a syphilitic. *Revue Hebdomadaire de Laryngologie, etc.*

Overcrowding in the Nursing Profession: a Remedy.

The profession of trained nursing is scarcely out of its teens, and yet one already hears the cry that the field is overcrowded, a cry which the city physician, besieged by nurses in search of work, knows is only too true. Various remedies are proposed to relieve the condition for which the rapid increase in the number of hospitals is responsible, an increase which has worked ill to the physician as well as to the nurse.

A reduction in the number of training schools by the union of those connected with small hospitals, will be a wise change, both because it will lessen the supply of nurses and because it will afford better instruction to those who now graduate from special hospitals with but inadequate training. The lengthening of the course of training to three instead of two years is also desirable. So, too, would be the change from a school in which the pupil nurse is paid for her work to one in which she pays for her tuition.

Yet, with all these checks to lessen the number of trained nurses, the profession will remain overcrowded so long as graduate nurses remain in the city and demand $20.00 a week for their services. There is, however, an almost limitless field for those women willing to go into the country and take for their services what their patients can afford to pay. To the woman who, in addition to earning her living, would like to feel that she is doing some good in the world, the country town ought especially to appeal. The need for trained nursing there is great, and the demand for the work will grow as its worth becomes known.

A physician in a village of 1,000 inhabitants gets from one-third to one-half the fee for a given service which the city physician, practicing among the well-to-do, receives. The nurse in a country town of this size could command from $7.00 to $10.00 a week. Living expenses will be much lower than in the city, and the diminished income will be more than offset by the lessened outgo. The social position of a nurse in a small town may, and usually will, be superior to that which she holds in the city, where nurses live almost as a class apart.

It was the fortune of the writer not long ago to be called to the sick bed of a friend in a country town remote from the city. The attempt was made to find a nurse to relieve the tired-out sister who had acted as such. The only women in the village who did nursing, neither of whom could be had, were two, who during the lulls in business did washing and scrubbing. As nurses they received $1.00 a day. To those who are accustomed to the tender ministrations of the trained nurse, a sponge bath given by their laundress would at least seem rather unseemly. This town supported four physicians, and the one in charge of the case said that he alone much of the time keep one nurse employed.

The woman to succeed in the country, and success surely awaits the right woman, must be one possessed of great adaptability, of good judgment, able to hold her tongue, willing sometimes to do work outside the usual line, and above all a woman of common sense, The country doctor will welcome her coming, for he will recognize in her an ally for want of whom he has fought many a losing battle.—*Buffalo Med. Jour.*

Dullness over Apex of Lungs Without Pathological Changes Being Present.

W. Kernig (*Zeitsch. f. Klim. Med.*), during many years of repeated investigations, found in marasmic patients an equal apex dullness over both lungs, without marked symptoms on auscultation, except diminished respiratory murmurs. On making post-mortem examinations of such cases, many of which had been mistaken for tuberculosis, the lungs were found entirely normal. The difficulty of percussing such patients, together with the presence of other symptoms, makes the error in diagnosis a pardonable one. The author explains this peculiar position by the relaxed muscles and by the fact that the long lying of the patient in bed causes a diminution of elasticity and a conraction of the air spaces within the lungs, together with a retraction on the part of the lungs themselves. Numerous experiments were also made by the author on the cadaver, and he has by this means obtained much valuable information.—*Ex.*

Cerebral and Meningeal Syphilis Treated by Intramuscular Injection of Insoluble Salts of Mercury.

J. C. Stinson (*N. Y. Med. Jour.*) reports a case illustrating the value of this method of treatment in a severe case of tertiary syphilis with marked cerebral symptoms. Treatment consisted of the intramuscular injection of two grains of salicylate of mercury suspended in sterilized almond oil, and later ten grains of iodide of potassium were given three times daily, increasing two grains each day. As to technique, if the sali-

cylate of mercury is used and two grains can be tolerated at each injection, two injections should be given a week till nine or ten are given. Forty per cent of the cases can take two grains; forty per cent. more cannot stand this amount, as it produces diarrhea, painful colic, sometimes considerable pain locally; these patients can be given a grain and a third at each injection, given three times a week. The remaining twenty per cent. will not submit to injections on account of the pain. Between the series of injections, which should be given for three years or longer, four series each year, iodide of potassium is given. The syringe used is an aspirating syringe, with a needle two inches long. The site for injection is a point about one quarter to half an inch above the junction of the inner and middle thirds of a line carried from the upper border of the great trochanter to meet the cleft of the buttock at right angles. The needle is withdrawn slowly, a little aristol or other antiseptic powder dusted on and covered with a few drops of collodion.—*Med. Rev.*

The Causes of Bronchitis.

In this year's Lumleian lectures, delivered by Dr. Samuel Gee at the Royal College of Physicians in London, the following closing remarks were made: "We have found it to be highly probable that most catarrhs are due to a specific infection, and they often depend upon contagion spreading from man to man. This doctrine has very important bearings upon medical practice. It leads us to believe that the means by which we can prevent catarrh are to be found in ventilation and cleanliness, if, indeed, ventilation be not a kind of cleanliness. Experience confirms this belief. When epidemic catarrh prevails, where do we find most of our patients? In those houses which are obviously the worst ventilated, even they may be the spacious houses of the rich. And where do our patients catch their catarrh? Either in houses of the kind I have mentioned or in buildings where men most do congregate, especially in offices, shops and churches. Large shops and stores, public museums and libraries, are ventilated as little as possible for fear of their contents being spoilt by smoke and dust. Many churches, both in town and country, are never properly aired for another reason—namely, because their architecture does not admit of it. Those 'rich windows which exclude the light' do worse than this—they exclude fresh air. The revival of Gothic architecture has been, from the sanitary point of view, a great mistake. Our despised forefathers of the eighteenth century erected plain and simple buildings which could at least be well aired, well lighted and kept warm and comfortable; nay, even the much ridiculed churchwarden, with his brush and pail of whitewash, was a praiseworthy minister of health. Modern dwellings are no better than the churches. In the matter of domestic sanitation people have fixed their attention too exclusively upon the drainage and water supply; light and air are not reckoned. Many of the large red-brick houses which have been built in great numbers at the west end of London and elsewhere during the last twenty-five years cannot be properly ventilated. The well of the staircase ought in every house to be a reservoir of pure air, and to have an independent supply from without. But in many houses the staircase cannot be ventilated

except through the rooms, and, in fact, it never is ventilated. Nor are the rooms themselves much better off; their heavily mullioned windows are designed with small regard to the transmission of light and air. The subsidiary and merely ornamental arts, which do no more than please the eye, are studied to the neglect of that far greater art which promotes the happiness and welfare of the whole man—the art of preserving health."—*Med. Rev.*

Insomnia in the Failing Heart of Mitral Insufficiency.

Agents for producing sleep or calming nervous agitation are of high importance in the treatment of the failing heart of mitral insufficiency. In some cases chloralamid has been useful as it is always a harmless hypnotic. It may be given in doses of from 20 to 50 grains in wafer cachet or in weak spirituous or acidulated solutions. Each draught should be made up separately. I prefer a combination of 20 to 30 grains of chloralamid with 30 minims of dilute hydrobromic acid with a dram of syrup of orange flowers and an ounce of pure water, administered at bed-time. Another harmless agent is urethane (ethyl carbonate), which is freely soluble in water, the solution having a saline but by no means unpleasant taste. In doses of from 15 to 20 grains at bed-time I have found it induces a calm, natural sleep, lasting in a case of severe cardiac failure for more than five hours, the patient being manifestly refreshed on wakening. Paraldehyd is perhaps a little stronger as a hypnotic. It may be administered in doses of from 30 to 90 minims in diluted syrup or in almond mixture, or in capsules (each containing 40 minims); it has a powerful and unpleasant taste.

In a considerable number of cases of manifestly distressful symptoms of dyspnea and insomnia no agent succeeded as well as morphia. By far the best way of administering it in case of cardiac disease is by hypodermic injection. The solution of the acetate or the hydrochlorate or the solution of morphia or atropia may be used. The first dose should be small—one-sixth or one-fourth of a grain –but this may be increased subsequently to half a grain. Care should be taken that the administration shall not become habitual.—*Sansom in Allbutt's System of Medicine. Philadelphia Medical Journal.*

Disinfection of Sleeping Rooms.

Professor Konig, of Gottingen, in a recent article on this subject says that at one time while he was practising medicine in Hanau, he suddenly discovered that his bedroom was thickly inhabited by obnoxious insects. A friend assured him that he could easily get rid of the pests, and proceeded to fumigate the apartment with corrosive sublimate. The success of this measure was most gratifying, and when the room was opened the dead bodies of various kinds of insects were seen strewn about the floor. This incident led the professor to hope that the same means would be effectual in destroying the infectious elements of contagious diseases and a trial in private houses after scarlet fever or measles and in hospitals after erysipelas or pyæmia, gave most satisfactory results. Since

adopting this method he has never seen a second case of a contagious disease which could be attributed to infection remaining in the room in which the patient had been confined.

The mode of procedure is very simple. From one and a half to two ounces of corrosive sublimate are put on a plate over a chafing dish and then the windows and doors of the room are closed. After the expiration of three or four hours the windows are opened and the apartment is thoroughly aired. The person entering the room should take the precaution to hold a sponge or cloth over the mouth and nose in order not to inhale the vapor. The following day the windows are again closed, and some sulphur is burned, in order to neutralize any of the mercurial fumes which may linger about the furniture and other articles. The room should then be again aired and cleaned, when it will be ready for occupancy.—*Massachusetts Med. Jour.*

Nosology of the So-Called Functional Diseases.

Drs. Joseph Collins and Joseph Fraenkel, of New York, in *Med. Record*, claim that these diseases are due to disturbances in the sympathetic nervous system, either as centrally represented in the brain and cord, in its ganglia, or in the peripheral nerves. The diseases that they include under the term functional for the purposes of this paper, are insanity without gross lesion, epilepsy in all its varieties, hysteria and allied conditions, the neurasthenic state, migraine, angio-neurotic edema, asthma, non pancreatic diabetes mellitus and insipidus, Graves' disease, rheumatism, rheumatoid arthritis, arthritis deformans, arterio capillary fibrosis, pathological obesity. They contend that these diseases are better explained on the basis of disease or derangement of the sympathetic nervous system than any other assumption. They all have a common feature of heredity, degenerating and influenced by surroundings. A striking feature of the functional diseases is their mode of onset. This is almost invariably insidious. The patient can give but little information as to the initial phenomena. In the case of organic, the reverse is the case. In these, the patient can tell in most cases the very day the trouble began, and point out the initial phenomena. In the case of functional disorders the patient's language is inadequate to describe all his ills; whereas, in the organic diseases, the patient states the case in a few words and usually makes light of his trouble. Then again, in the matter of treatment there is a feature in common to all the functional diseases. The patient's strength must be improved in all cases. The vegetative system must be attacked. This does not mean that the acidity of the blood in rheumatism should not be lessened, or that the nasal membrane should receive no attention in asthma; but behind all these there lies a weakness that requires long-continued toning.—*Ex.*

Dermoid Cyst in Three-Year-Old Girl.

Dr. H. Huttl *(Ungar. Med. Presse)* reports a case of operative embryoma ovarii in a 3-year-old girl. She complained of severe abdominal pain of several weeks' duration. Examination under anesthesia

revealed a dense, movable mass the size of an orange located in the right inguinal region. Kidneys, liver and spleen normal; no temperature; urine and passages normal.

Laparotomy was performed and an ovarian tumor removed, together with right tube. Tumor weighed 133 grains and consisted of two large cysts, the lower one containing a small walnut-sized mass, which was partially covered with reddish, curly hair, and immediately beneath this a small portion of normal bone.—*The Med. Stand.*

Hypodermic Injection of Silver Nitrate over the Course of the Vagi in the Treatment of Pulmonary Consumption.

Mays (*Boston Med. and Surg. Jour.; N. Y. Med. Jour.*) has followed practically his belief, often announced, that the lesions of pulmonary consumption are the result of a defect of nervous tone, in which the vagi are seriously implicated. A suggestion was afforded by the operation of vagus stretching in severe cough associated with exophthalmic goitre and in epilepsy, and the same principle was sought to be carried out in the counter irritation resulting from the injection of nitrate of silver immediately over the course of the nerves in the neck. It was found that from four to seven minims of a 2½ per cent. solution of pure silver nitrate answered the purpose best. The local visible effects of the injections show themselves in nodular, sometimes in diffuse, swelling and in redness and pain. The number of injections necessary depends on circumstances. As a rule it is a good plan to begin by one injection on the side of the neck on which the affected lung is situated. In a week or ten days this is to be repeated and in urgent cases it may be continued at intervals of three or four days. The deductions which may be drawn from this plan of treatment are:

1. That the best results are obtained in incipient cases, both in regard to the symptoms and physical signs of phthisis.

2. That in most of the advanced cases of this disease the injections have a good and in some instances an exceptional effect on the symptoms and physical signs.

3. That in the great majority of the far advanced cases they ameliorate the cough, expectoration and some other symptoms temporarily, but have little or no influence on the local condition of the lungs.—*Albany Med. Annals.*

Green Stools in Enteric Fever.

The occurrence of green stools in enteric fever which has recently given rise to some discussion in the *British Medical Journal*, is dealt with in an article in the *St. Bartholomew's Hospital Reports*, by Drs. A. E. Garrod and Drysdale, and the late Professor Kanthack. They describe the character of this kind of stool in three cases of enteric fever. The stools consisted of particles resembling chopped parsley suspended in a liquid, which on filtration was turbid but almost colorless. They were acid in reaction and devoid of offensive odor. Chemical examination of the solid particles showed the absence of urobilin or its chromogen, to

which the normal color of stools is due, and the presence of biliverdin; and this the authors believe to be the coloring matter present in all green typhoid stools. The biliverdin probably exists in combination, since it can only be extracted by the use of acid alcohol. This view as to the causation of the green color was held by older writers, but lately Lesage and others have asserted that the pigment is frequently of bacterial origin. In con equence of these statements the authors made cultures of organisms from these stools, and obtained as the predominant organism the bacterium coli commune or some member of an allied group. Proteus vulgaris was found in two cases, but no organism capable of forming a green pigment when grown in artificial media. Presence of unchanged bile pigment in the stools may be due to hastened peristalsis associated with extensive ulceration or catarrh about the lower end of the ileum and the colon, that is, at that portion of the bowel where the normal conversion process of the bile pigment into urobilin takes place. Possibly, however, bacterial action may be concerned in some way or other with the absence of the usual processes of transformation of the biliverdin into urobilin.—*Brit. Med. Jour.*

The Roentgen Rays in Thoracic Diagnosis.

The Roentgen rays are steadily coming into more constant use by the great experts in physical diagnosis, in the recognition and differentiation of intrathoracic conditions. Last year at the meeting of the German Medical Congress, Dr. Schott, of Nauheim, demonstrated by a series of most careful skiagrams that even our knowledge of so delicate a subject as heart dilatation could be greatly aided by this new diagnostic method. In the proceedings of this year's German Medical Congress, an abstract of which appeared recently in the *Medical News*, it will be seen that the distinguished heads of German clinics frequently turn to the X-rays for help in conditions that were formerly supposed to be fully revealed by older methods of physical diagnosis.

In the diagnosis of aneurism practically all authorities are agreed that the Roentgen skiagrams are of the greatest service. In cases in in which there are suspicious symptoms in the thorax, and especially if there is any, even the slightest, reason to suspect aneurism of the descending aorta, the X-rays are a most reliable adjuvant.

There are heart conditions in which a series of skiagrams furnish information that is of the greatest value for prognostic as well as diagnostic purposes. This to be sure, is the more exact and delicate side of the application of the Roentgen rays, and one that requires special training, but the time spent in acquiring the technic for thoracic diagnosis cannot fail to be profitably expended—a fact that will become more and more apparent in the near future.—*Med. News.*

Edema in Bright's Disease.

Reichel (*Centralblatt für innere Medicin*) states that several years ago he expressed the opinion that impaired functional activity of the kidney led to a physical alteration in the tissues owing to the retention

of toxic substances in the blood; this produces the edema and also cardiac hypertrophy, as a result of the increased arterial tension. Reichel has undertaken a series of experiments to support this view. He has compared the power of absorption in renal patients with that in patients with cardiac disease, as well as with that in healthy subjects. After the injection of fifty cubic centimetres of saline solution in these cases, he found that absorption occupied a much longer time (sometimes eight or ten days) in renal patients. The normal transudation and resorption of the tissue fluids depend on metabolism and the functional activity of the kidneys. Reichel claims that the dropsy of renal disease is due to an alteration in the power of absorption.—*Ex.*

Relative Toxicity of Cocain and Eucain.

A. H. Peck, M.D., D.D.S., Professor of Materia Medica, Therapeutics and Special Pathology in Northwestern University Dental School, Chicago, in a paper entitled "Relative Toxicity of Cocain and Eucain," read before the Section of Stomatology at the 50th Annual Meeting of the American Medical Association, Columbus, June, 1890, arrived at the following conclusions:—

1. The action of cocain is inconstant; one never knows whether the symptoms occasioned by like quantities of the drug, in animals or individuals, under like circumstances, will be similar or dissimilar.

2. The action of eucain is constant. The symptoms occasioned by the use of like quantities in animals under like circumstances, and so far as my experiments have gone, in different individaals also, are the same.

3. The first action of cocain on the heart is that of a depressant, and on the respiration that of a mild stimulant; the after-effects being, on the heart, that of a decided stimulant, and on the respiration that of a decided depressant.

4. The first action of eucain on both the heart and respiration is that of a stimulant, the after-effects being that of a decided depressant.

5. Cocain causes death in animals by paralyzing the muscles of the respiratory apparatus, the heart's action continuing in a feeble way for a brief period after breathing ceases.

6. Eucain causes death in animals by paralyzing the muscles of the heart and of the respiratory apparatus, they ceasing to operate simultaneously.

7. Eucain in toxic doses nearly always causes nausea, and occasionally vomiting.

8. Cocain is much less nauseating and scarcely ever causes vomiting.

9. Eucain is decidedly a diuretic, causing vesical discharge in a majority of instances in which a toxic dose is used.

10. Cocain is not a diuretic to any appreciable extent, vesical discharge having occurred in only one instance in connection with all my experiments.

11. The pupils of the eyes, in nearly all cases of cocain poisoning, do not respond to light, and the eyeballs bulge more or less from their sockets.

12. The pupils of the eyes in most cases of eucain poisoning do respond feebly to light, and the eyeballs rarely bulge from their sockets.

13. The action of the toxic doses of eucain is more like that of a paralyzing, tetanoiding, convulsion-producing agent, than it is like an anæsthetizing one, the plantar and cremasteric reflexes nearly always remaining active.

14. Toxic doses of cocain cause general anæsthesia in connection with the other symptoms in the majority of cases.

15. True tetanus of all striped muscles of the limbs, and Cheyne-Stokes' breathing nearly always occur with the use of cocain; but either occurs seldom when eucain is used.

16. Cocain is at least three times more toxic than Beta-eucain, and Alpha-eucain is as toxic as cocain.

17. Boiling does not destroy the efficacy of cocain, but it does modify it; and boiling in no degree lessens the efficacy of eucain.

The above deductions have been made only after many experiments in connection with each individual point. I have observed many interesting features in connection with the relative worth of these drugs as local anæsthetics, but this paper is not meant to treat of this phase of the work. There is much experimental work yet to be done in this connection, the results of which I shall be pleased to present at some future meeting.

Peculiar Ringworm of the Hands.

Pringle (*British Journal of Dermatology*), at a meeting of the Dermatological Society of London, exhibited a patient, a man 28 years old, suffering from an eruption on the backs of both hands of six weeks' duration. The eruption consisted of numerous scaly patches of dermatitis, marginate in character, distributed over the dorsal surface of both hands and of all the fingers as far as the roots of the nails. One patch, situated over the metacarpo-phalangeal joint of the right index finger, was eczematous and discharging. The hair, which was unusually abundant over the sound skin, was scanty over the diseased patches. Micro-copical examination of the hairs demonstrated the presence of abundant mycelium. The case recovered in a few days under the use of an ointment of salicylic acid and ammoniated mercury.—*Ex.*

Inversion of the Uterus.

H. E. Marion, in the *Boston Med. and Surg. Jour.*, reports two cases of this rare accident. Both were primipara. In one there was apparently no cause for the accident; in the other, in the third stage, it is stated that "the uterus did not contract quickly, and I stimulated it by manipulation. After fifteen minutes, when there had been apparent contraction of the uterus, I made slight but not continuous traction of the

cord, at the same time keeping one hand on the uterus." After the removal of the placenta flowing was considerable, and it was noticed that there was nearly complete inversion. In both these cases reposition was established without much difficulty, and both patients made an uninterrupted recovery.

In discussing the etiology of the affection, the writer states that no satisfactory explanation has yet been given, but that undue tension of the cord and a paralytic condition of the uterine muscles are important factors. The most fruitful source of inversion is traction of the funis in order to remove the placenta. A vulnerable condition in the patient, on the one hand, and a faulty technique of the obstetrician on the other, or a combination of these two with perhaps associated factors, are chiefly responsible for the accident.—*Ex.*

A Case of Intrauterine Epidemic Cerebro-Spinal Meningitis.

R. B. H. Gradwohl (*Phila. Med. Jour.*) reports a case of a woman of 31 years, who died of cerebro spinal meningitis; she was seven months pregnant. At the necropsy typical meningitis was found on opening the cranium; there was great injection of the pia-arachnoid and an abundant purulent exudation scattered here and there over the entire meningeal surfaces, particularly at the base. The same condition was found upon the cord. An exact counterpart of the condition of the maternal meninges was found in the fetus, with perhaps more of a sero-purulent than a purely purulent exudation, as found in the mother. Bacteriologic examination of fluid from both the maternal and fetal meninges revealed the presence of the diplococcus intracellularis meningitidis. Pathologically the meninges exhibited about the same condition of inflammation and degeneration such as is found in epidemic cerebro-spinal meningitis. In whatever way the specific micro-organism may gain access to the fetal tissues from the mother, it can be said that in a disease like typhoid, or epidemic cerebro-spinal meningitis, there must surely be some selective affinity on the part of the micro-organism for some tissues.—*Med. Rec.*

Tubercular Peritonitis.

Holmes (*Annals of Gynecology*) concludes:

1. That tubercular peritonitis is a relatively common disease.

2. It is never a primary disease, though it is usually impossible to find the initial focus.

3. Recovery follows laparotomy, as a general rule, unless there is an initial focus to keep up the disease.

4. This disease appears in three different forms—the exudative form, the dry form and the ulcerative form and they are recognizable in the order named.

5. Microscopical examination of the peritoneum is sufficient for a positive diagnosis. The demonstration of microscopical tubercles, or the recognition of the bacilli are only confirmatory.

6. Puncture of the abdominal wall for diagnosis or for the removal of ascites and injection of air, fluid, or iodoform, is dangerous and should not be practised.—*The Med Stand.*

The Operative Treatment of Pulmonary Cavities.

Wiener (*Münchener medicinische Wochenschrift*) describes a case of gangrene of the lower left lobe, which he treated by pneumotomy. He turned back a flap of skin and muscles eight inches long, and after resecting ribs rather freely, came upon the pleura. As the parietal and visceral layers were adherent he was able to proceed to the pneumotomy at at once. With a knife of a Paquelin cautery he penetrated the lung for about two inches, when the cavity was opened. It was found to contain a large slough of pulmonary tissue as big as a fist; this was removed and the cavity packed with iodoform gauze. Five days later another cavity was found, which communicated with the first by a narrow opening, and resembled it in also containing a large slough. This was treated in the same way. The quantity of expectoration at once diminished, and became simply purulent instead of fetid. Six weeks later the cavity had completely closed. There was not even a sinus left, and the patient went out of hospital having gained over thirty pounds in weight. The writer considers that such cavities should be opened freely.—*Ex.*

Intravenous Injections of Mercury in the Treatment of Syphilis.

Dudley Tait (*Occidental Med. Times*) claims to have had good results in a number of cases in which other methods of administration of the mercurials had failed. The most practical solutions used for injection are the cyanide $\frac{1}{30}$ to $\frac{1}{20}$, and the sublimate $\frac{1}{30}$ to $\frac{1}{1000}$. Amount injected daily varies from 1 to 3 cc. This method of administration is based upon the fact that mercury has no effect on the organism until it enters the blood Mercury can be detected in the urine in ten minutes after injection and will have all disappeared within thirty six hours. The intravenous injections should be used where other methods have failed and in cases demanding rapid action or early and intense mercurialization. No ill results need be feared if one employ an ordinary amount of skill and care. A small needle should be used.—*Med. Rev.*

The firm of Parke, Davies & Co., of Detroit have shown their liberality in donating $100 worth of their famous antiseptic preparation to the medical stores of the Canadian Contingent just gone to the Transvaal, and have also given leave of absence to two of their men with a guarantee of re-instatement to their positions upon their return. We congratulate the firm on their liberality and the kindly feeling expressed to British success and welfare.

BOOK REVIEW.

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This work, with Bacon's Otology, and Nettleship on Disease of the Eye, covers the entire field of Opthalmology, Otology, Rhinology and Laryngology in three convenient and low-priced manuals, peculiarly adapted to the needs of students, and forming a complete and trustworthy library on the subject.

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SOME HISTORICAL AND OTHER DATA ON CIRCUMCISION

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Circumcision is the act or custom of cutting off the prepuce of the male; it is enjoined upon the Jews by the Mosaic law, which commands, that every new born male, reaching the age of eight days, shall undergo this ritual operation. With put few exceptions, the custom and time of ritual procedure is closely adhered to. There are, however, cases which demand a postponing of, if not altogether an abstainance from this ritualism. The former is true in instances, where the child is too weak to withstand the shock on the sequelar of the operation. Delicate children are very often circumcised at 2, 3, 6 or even 12 months of age, the guide obviously being the state of health, and general condition of the infant. Medical opinion is therefore conclusive in cases of doubt or uncertainty. As a rule however the most delicate children stand the operation without evil consequences.

If from any reason, the physician pronounces the child to be unfit for the operation, the time may invariably be lengthened for an indefinite period. Any cutaneous diseases preceeding the date of circumcision or coincident with it, are grave obstacles to the performance of this rite. It is therefore imperative, the cutaneous surface be healthy and normal before attempting any operative procedure. This conclusively shows, that the most ancient jewish hygrenists and sanitarians were well aware of the dangers of infection, which are apt to follow a wound in connection with cutaneous disorders. This seems to correspond with modern ideas on the subject of infection from the integument. There are many theories advanced, as regards the assigned time of circumcision. Perhaps some may ask, why circumcise on the 8th day? This question could be answered by saying that a religious axiom does not require any commentaries or questions. It is an axiom and therefore will invariable be followed more or less verbatim.

Modern thinkers however, find a clue to it, which is logically compatible with the present state of our physiological knowledge. Physiologists and embryologists admit that the foramen ovale becomes obliterated at or about the 8th or 10th day of infantile life. Old "Maimonides' mentions, that circumcision shall only be performed after "the blood i

in good order," which is apt to be on or about the 8th day. There is no difference then between these two statements. The modern physiologist mentions, Maimonides however omits the physiologic process of the closure of the foetal foramen. As regards the practical aspect of it, they both agree, viz., "the full establishment of the adult circulation." There are other theories predominating, but the most pausible one seems the above mentioned. Circumcision may be altogether abandoned in some individuals. A rabbinical law forbids circumcision in any case, where previous male children of the same family, have died as a result of the after affects of the operation; in short when a peculiar tendency or idiosyncrasy from some source exists in a family, which favors a fatal result in repeated circumcisions, the future male offspring ot the same family is exempt from this operation, unless absolutely known, that he will not succumb to it. Of course in such cases medical advice is sought for and depended upon. It would not be out of place here, to say a word about the modus operandi in ritual circumcisions.

The operation is performed by a professional man known among the Hebrews as a "Mohel" or "Circumciser," who conjointly exercises the function of a "Shohet" (killing fowl and cattle by the ritual method).

On the 8th day an assembly of ten persons is summoned to the parents house, among them the Mohel and Rabbi of the community. After several ritual observations, the child is carried in on a pillow by an attendant and placed on the lap of the Rabbi. The Mohel, situated vis-a-vis, grasps the prepuce between his index and middle fingers of the left hand, or else compresses it with a certain kind of forceps especially constructed for that purpose somewhat the shape of a horseshoe, taking care not to include the glands and with a sweep of the knife cuts it off. This is termed the "Circumcision proper." Next follows the separation of the mucous membrane of the prepuce from the latter and to some extent from the sulcus and glands; this is known as "Periah" or "Uncovering" and is effected either by the nail or by a shield-like instrument—only recently introduced—surrounding the thumb, similar to the thimble arrangement used in the removal of adenoids. This forms the most important ritual step during this precedure. No sutures are inserted to bring the wound in opposition, but left to heal spontaneously, and in almost all instances healing takes place by first intention. The third step consists in sucking the bleeding area by the mouth of the Mohel. This latter mode, termed "Mezizah" or "Buccal Suction," is but very little practiced at present and has given place to modern antiseptics and haemostatics. However it is observed in some parts of Poland, Russia and Galicia, but is considered as unessential. The modern Mohel utilizes aseptics and antiseptics; thus previous to the operation the knife is submerged for five minutes in boiling water, to which carbolic acid has been added. The parts are carefully disinfected, by washing them with an antiseptic solution. At the close of the operation the bleeding area is mopped off by pledgets of sterilized or absorbent cotton and boric acid or aristol dusted over it, and the organ is finally enveloped in gauze. We may with certainty say, that all aseptic and antiseptic rules and precautions are carried out to the fullest extent. Nothing

remains what could be commented upon or throw a shadow of sepsis upon the operation. For some reason the third day after the operation is considered a dangerous one, the Mohel visits the child on that day; scrupulously examines his genitalia, redresses the wound and if any febrile or other manifestations are present, summons medical aid. Thus, any reproach from an aseptic standpoint, which may mar a ritual circumcision is unfounded and baseless. Circumcision is also practiced as a rite by Mohammedans, and takes place about the age of puberty, which in their estimation is the thirteenth year. It is obligatory and constitutes an important command of the Korán. The Abyssinian christians—who by the way are more Jews than christians—are deprived of their prepuce in a like manner late in adult life. It is claimed, that King Menelik was circumcised right after his ascension to the throne. Abyssinians don't use a metallic instrument of any description, but shells, corals and sharp stones in performing this rite. That reminds one of the biblical episode, in which Zeparah, the wife of Moses, circumcised her eldest with a sharp stone (Leviticus). Again Joshua introduced compulsory circumcision in his army, which was performed by means of sharp fragments of rock, and said unto the sufferers: "Now, God has effaced the shame of Egypt from ye" (Joshua).

We shall return to this "shame of Egypt" later on in our historical description on that subject. At present suffice it to say that in ancient times the followers of the rite of circumcision utilized any sharp instrument—from the knife to the shell—as long as the ultimate result was effected by it. The Egyptians had a special instrument for that purpose. Circumcision is employed in individual instances among all civilized people for remedial purposes and has gained a wide reputation among parents of other religious denominations as a prophylactic for syphilis and venereal diseases. That the latter is a fact corroborated by numberless instances cannot be denied and the syphilogist and general practitioner is aware of the important sanitary results obtained by it.

The history of circumcision offers but very few points of interest. It is submerged in an ocean of obscurity and the slight information we possess on that subject is rather questionable. The origin of circumcision is unknown. That it began at the cradle of human kind, Asia and especially in the Orient is an assertion quite plausible. Ancient writings, notably the Sanscrit (?) claim Ceylon as the birthplace of circumcision. That this is rather doubtful is expressed in the singular fact that but very few inhabitants of the island are circumcised and these few belong to the Mohammedan sects There is no tradition among the Malays that at any time there existed such a rite as circumcision. China and its various ramifications, the plateau of Thibet, show no clue that such an operation was ever in vogue. That perhaps the compulsory diminution of the feet of the Chinese fair sex has been substituted for the circumcision may have a fair foundation as we shall see in some other part of this article. No doubt the æsthetic feature of the above is the main cause for carrying it into effect. The Hindoos practiced circumcision at or about 3000 B. C. in a very peculiar and singular manner. They circumcised their females. Even up to date the same barbarous and odd

operation is performed among some tribes of Egypt and Central Africa. It consists in cutting off a flap from the labia minora. Probably the Chinese custom of the foot-diminution is but a substitute in lieu of the labial circumcision. The Hindoos however preferred the clitoris as the part to be circumcised and as we know that the organ resembles in many respects the male penis we are not surprised at this singular oddity. Some of the tribes in Central Africa, even in the present decade, practice clitorial circumcision and claim that it not only affords a preventive means toward the infection of the various venereal diseases but that it also blunts sexual sensibility. The Hindoos performed this operation probably with a view of obviating vile lust and abnormal sexual desire in the female and in this way paving the path to stern virtue. Old Egypt is perhaps the land wherein circumcision was extensively practiced yet it was not compulsory. A circumcised man was a privileged one and perhaps we are not surprised to find it among the nobler castes, viz., the priests and to some extent in the soldiers. The two latter castes constituted what is known as the "Copts or Natives" of Egypt in contradistinction to the "Invaders or Shepherds," the lowest caste and probably immigrants, who fervently objected to circumcision. Any man desiring to become a priest for that purpose and wishing to enter the sacred school at Heliopolis had among other requirements to be circumcised. All officers of the army and those of the court of the Pharaones were circumcised. This rite in Egypt dates back as far as 3000-2500 B. C. If the patriarch Abraham, who lived at or about 2000 B. C., gained the knowledge of circumcision from the Orient or from Egypt is not known. One thing we are certain of is that Abraham was not the first man to practice circumcision although the first to introduce it among the Hebrews. "The covenant between Abraham and his invisible God had been simple. No condition but isolation and the sign of it. Circumcision had been imposed upon the first Hebrew." (J. R. Sheeley, Ecce. Homo pt. I, Ch. 4, p 41.) And this covenant was faithfully adhered by future generations until the emigration of Jacob to Egypt, where, owing to the more pastoral occupation of the children of Israel, their repulsion by the Copts, their yoke and bitter slavery under the Pharaones, this custom and covenant sunk into oblivion and became absolute. It was not until after the delivery of the Jews from the exile by Moses and the genius leadership of Joshua who urged, nay rigidly insisted, upon them to "Wipe off the shame of Egypt from them," that they finally with utmost contempt consented to be circumcised. The Hebrews in the ancient times exclusively used sharp stones, shells and a certain kind of hard wood; later however instruments made of iron, copper, steel and other metals were preferred. The Egyptians, as mentioned above, had a special instrument for this purpose. If I am not mistaken such an instrument is to be found in the Royal Museum of Archæology of Berlin and as some papyri indicate was solely used for circumcision, The Egyptians attributed various prophylactic and remedial powers to circumcision, notably the prevention and cure of leprosy and venereal diseases. Hippocrates advocates circumcision for epilepsy, infantile convulsions and manifold nervous disorders. Mental diseases are said by the same author to be successfully treated by per-

forming circumcision. This is in correspondence with modern theories. Furthermore incontinence and retention of urine in children have only abated after performing this operation. Various conditions of the glands, penis and prepuce as balanitis, ulcerations, etc., posthitis, phimosis and paraphimosis are best treated by circumcision. Chronic cases of urethritis and cystitis which otherwise obstinately resisted treatment are occasionally benefitted by a circumcision. I have seen masturbaters to stop their vile practice only after a circumcision. Maimonides, the celebrated Hebrew writer, philosopher and physician, declares that circumcision "diminishes sexual appetite" and may probably for that reason have been practiced among the ancient Egyptians and at present among the Hebrews and Mohammedans. That it to some extent diminishes sexual desire is a fact well corroborated and on that account somewhat explains why venereal diseases are so proportionately few among the Jews. Before concluding my article I would say that some christian sects, notably the "Jewish christians," among whom circumcision prevails, maintain that the Mosaic ritual was of perpetual and universal obligation, "He withdrew and separated himself fearing them which were of the circumcision." (Gal. II, 12.) It is not to be forgotten in connection with this subject that the festival of the circumcision of Jesus is observed on Jan. 1st. A word about the circumcision in Oceanic and some of the Coral Islands of the Southern Indian Ocean. The savages in those islands are also in the habit of instituting a certain kind of circumcision in young males; it consists in amputating a portion of the scrotum and is performed during adolescence in the male children of the nobles and chiefs of tribes. That this may prove an efficient means for the prevention of varicocele is a question to be considered. In connection with circumcision I might touch somewhat on castration, which is sometimes practiced as a rite in lieu of circumcision but its use is rather restricted to individual cases. The "Old Believers" in Russia, a sect of the Greek-Catholic church practiced it exclusively and consequently enjoin celibacy, hence the induction of ritual castration. Again castration is in vogue in the Orient in some instances, viz: the holders of large harems impose it upon the servants and guards of such institutions to undergo castration in order to obviate temptations and thus prevent divergence from virtue on the part of the fair sex. Those unfortunates are termed "Eunuchs." Certain crimes, as rape and sodomy, were formerly punished in India and Persia about the 11th or 12th century by circumcision and amputation of the penis. Castration was also resorted to as a means of punishment for various transgressions and if I am not mistaken a member of the Michigan legislature has recently introduced a bill to the effect that individuals committing rape shall unvariably be castrated. The fallacy of such a proposition is obvious.

Before bidding adieu let me apologize to you for the brief and incomplete data furnished therein. Any additions to the latter would be regarded by the author with special favor. This short article has by no means exhausted every possible resource and much remains yet to be learned.

TREATMENT OF TAPEWORM BY USE OF MORPHINE INJECTED INTO THE PROTRUDING PART OF THE PARASITE.

BY J. W. KIME, M. D.,

Editor *Iowa Medical Journal*, Keokuk, Iowa.

The attempt at removal of tapeworm by any of the tænicides is followed by a large number of failures which, by the method which I have used in two recent cases, might be converted into successes.

It is a very common occurrence for the parasite under such circumstances to drop down into the lower part of the intestine and reattach itself with the sacrifice of a considerable portion of its caudal extremity. I have sometimes been able, by copious injections of water or saline solutions, to bring away the head of the worm, but far more frequently have I succeeded only in breaking off the worm.

Recently it occurred to me, while attempting to remove one of these pests, fifteen feet of which were visible and ten feet invisible, that I might take advantage of the latter portion by properly medicating the protruding part. I therefore, after tying a string moderately tight around the worm about three inches below the patient, injected above the string, directly into the substance of the worm, one-half grain of morphine; the protruding part was then severed with scissors just below the ligature, and the three or four inches remaining were passed up through the shpincters and left there about ten minutes.

A large injection of water was then given, and the upper portion of the worm passed entirely motionless and apparently dead.

Since reporting this case in the *Iowa Medical Journal* I have treated one other case the same way, and with the same results.

Most varieties of tapeworm have a pair of longitudinal vessels passing from one extremity to the other, through all the segments, and toxic substances injected into the body of the worm are taken up by them and reach every portion of the parasite.

The mistake is often made of simply prescribing some remedy with directions for the patient to use. Only a small percentage of successes can thus be expected.

The only proper method of treating tapeworm is about as follows:

The patient does not fast or have any preparatory treatment whatever, except that he eats no breakfast on the morning of the day of treatment. At about 9 A. M. he is given a dose of infusion of pomegranate, or what is far better, of tannate of pelletierine, with one or two drops of croton oil. The patient should be kept at rest, generally under the personal observation of the physician, for two or three hours, when movements of the bowels will most likely occur and the whole or part of the worm be passed. If only a part protrudes, then the hypodermic should be used as above described.—*Medical Journal.*

SOME OF THE COMMONER REFLEX SYMPTOMS FROM DISEASE OF THE RECTUM.

BY I. L WATKINS, M. D., Montgomery, Ala., in *Medicine.*

The subject of reflex symptoms is so little understood that any contribution on the subject may be regarded as speculative. That such phenomena exist is admitted by every one; and why they are, in this age of marvelous discoveries and wealth of knowledge, so little understood is beyond conception.

The most pronounced and annoying reflex symptoms are those due to disease of either the rectum or generative organs. These tissues are richly supplied with cerebrospinal and sympathetic nerves. Many conditions dependent on disease of these organs, heretofore regarded as reflex, are, in fact, not reflex at all, but due to anatomical relations. The migration of bacteria by continuity of tissue is well understood. The old idea that all infections were conveyed through the lymphatics is now known to be incorrect. In cancerous disease malignant growths are found in cellular tissue where no glands exist. The bacillus coli communis, whose natural habitation is the bowel, is known to infect the neighboring organs. The gonococcus not infrequently infects the mucous membrane of the bowel. These facts should not be overlooked when investigating the cause of a disease in a given organ.

That one who devotes most of his time to gynecological subjects should attempt to write on diseases of the rectum, at first seems inconsistent and in infringement on the field of the proctologist; in justification of this effort I shall attempt to make a report of some cases coming under my observation that belong to no small class of cases who consult gynecologists for relief of symptoms referred to the pelvic organs. On examination these organs are found perfectly healthy. The question might justly be asked, Why did we not turn these cases over to a rectal surgeon? The answer to this question will be found in the statement that no one can be successful as a gynecologist without at least some knowledge of the diseases of the neighboring organs. The character of there troubles makes it desirable for them to fall into as few hands as possible.

In directing attention to this subject it is not my purpose to discuss the more common pathological conditions of the rectum, but to call attention to a line of symptoms of the pelvic organs which to a less careful observer might prove very confusing. The question may be asked whether any trouble exists in the rectum. The answer is usually in the negative. Notwithstanding the statement that there is nothing wrong with this organ, in cases of failure to find, on careful investigation of the other pelvic organs, a condition sufficient to account for the symptoms, the rectum should always be examined. We will very frequently be deterred from making this examination, and be unable to give a positive opinion, the patient insisting all the while that the trouble is in the uterus, ovaries or bladder. We may be able to elicit a history of a predisposition to dysentery and the passage at intervals of glairy mucus, which has been attributed to obstinate constipation. This condition may have existed for a few months, or perhaps for several years. The sphincter is abnormally contracted and very sensitive, which will render the examination

unsatisfactory, owing to the pain on passing the speculum. With the aid of a good light and the sphincter well dilated the condition to which I ask special attention will, in the majority of cases, be found. On either the front or back surface, or maybe both, will be found an area, varying in size from a 25-cent piece to a silver dollar, where no mucous membrane exists. It begins about the muco-cutaneous junction and extends up the wall of the bowel. The base of this region is pale, with irregular edges, and the depth not more than the thickness of the mucous membrane. It exists frequently without any relation to a pile tumor or fissure. As a rule, more or less general proctitis may be found. Owing to the similarity of the mucous membrane and the base of this ulcer, in a bad light it is an easy matter to overlook it. Just what is the character of this ulcer I am unable to state, as I have not found them described in any of the works on disease of the rectum at my disposal. They are neither tuberculous nor syphilitic in character, as they rapidly yield to local treatment. When we remember how richly supplied these tissues are with sympathetic nerves, we readily see that the exposure of a small area of these nerves operating through the spinal nervous system may produce annoying symptoms. A bacteriological investigation might shed some light on the subject. This condition is most frequently found in people of sedentary habits, who do not earn their daily bread or attend to their bodily functions.

I will select three typical cases to report. It will be unnecessary for me to report more, since there is such striking similarity in them all.

Case 1.—In September, 1895, Miss W———, aged 22 years, from a neighboring village, applied to me with the following history: She began to menstruate at an early age, which was regular and not attended with pain. She had had the usual diseases of childhood, but no serious illness. Was rather stout, with fairly good color. While at school was never active, being unable to indulge in the usual games with other girls. Before graduating she began to miss her periods, and developed nervous symptoms, for which she was taken from school and put under treatment by the family physician. Failing to get relief by this measure, she was placed in a surgical institute, where she had electricity, massage and baths for several months. On the above date she appeared to me with a line of symptoms very much exaggerated and very confusing—pain in the back, left side, both legs, extending to the knees, with the sense of a heavy weight in the pelvic region while standing. She was classed as a typical neurotic subject. Examination revealed a uterus normal in size, with some cervicitis, and small, sensitive ovaries. After the usual preparation she was curetted and a small hemorrhoidal tumor removed. Some improvement followed, which might have been attributed to the rest in bed. She continued to suffer with insomnia and the passage of large quantities of mucus from the bowels. Owing to great sensitiveness I was unable to treat the rectum further except under ether, which was administered, and the sphincter dilated. At this time the ulceration described above was found well developed, and treatment was directed to its relief. The usual application of nitrate of silver with other antiseptics, and occasional cutting through the base of the ulcer, sufficed to improve all her symptoms.

Though not entirely relieved, she was advised to return to her home for the purpose of taking a rest from treatment, which she did. Feeling that she was quite well, she decided that she would spend the summar at Mount Eagle, from where she wrote me a letter stating that she was perfectly well. Soon after this she returned to her home and found herself growing rapidly worse. Being discouraged with her experience with me, she now applied to two distinguished members of the profession, one of whom advised a removal of her ovaries, which advice she declined to accept. She has never recovered, and now regards herself as an incurable invalid. In my opinion, had this woman's rectum been properly treated at an earlier date she might have been saved from all the suffering which she has endured.

Case 2.—Mrs. C.———, aged about 35 years, nullipara, entered my sanatorium in November, 1895, very anemic and a confirmed invalid. About five years before that time her ovaries had been removed by Dr. Batty for dysmenorrhea. She has never been well since that time, although she did not menstruate. Complained of severe pain in left side, weak back and indigestion. Had very much the appearance of a cancerous subject. On examination I found the generative organs in the condition usually produced by the operation which she had undergone. The vagina was patulous and the perineum was slightly lacerated. The uterus was displaced backward, and there was a fair crop of hemorrhoidal tumors. The perineum was repaired, the tumors removed, and an extensive ulceration on both anterior and posterior walls of the rectum was found. After some weeks of persuasion and argument I succeeded in getting permission to treat the rectum. Immediately she began to improve, and was relieved from all of her symptoms. In my opinion, this is one of a large number of cases where the ovaries are removed and the patient left in as bad or worse condition than before the operation. We should be very positive that these organs are the cause of the suffering before we remove them.

Case 3.—Miss A———, aged 22 years, was referred to me in July, 1898. The family history was negative. Menstruation regular; had had no sickness except a slight attack of dysentery about a year previously. Since that time she had noticed some mucous discharge from the bowel. For several years she had been a great sufferer with pain in the lower part of the abdomen, and part of the time was unable to walk or stand. Recently she had vomited her meals immediately after taking them. This statement is doubtless untrue, since she was in very good flesh. This symptom was relieved by threats of severe treatment if she kept it up. As she had been sent to me to have her ovaries removed, I made a careful examination under ether, and was unable to find any disease of these organs. Although she stated she had no trouble with the rectum, I found two very large ulcers, to which I applied pure nitric acid, which relieved her in about three weeks. When discharged she was able to get about actively, though when she came she had to be carried from her carriage to her room.

I might relate many similar cases, but my object is only to put the regular practitioner on his guard before he advises a patient that the ovaries will have to be removed, and for that reason she must consult a specialist. It is never pleasant to have to disagree with the diagnosis of the family physician, but when he is so careless as to make the error alluded to in this paper humanity compels us to do so.—*Medicine.*

THE HUMAN FOOT.

The feet are the basis of posture and to a considerable extent of movement; they are both a foundation, bearing the weight of the body, and propulsive organs, assisting in shaping its attitudes and in moving it from place to place.

If the feet are weak, painful or deformed, the body is hindered not only in its movements but in its development, but if they possess their natural strength and elasticity, there is at least a basis for the proper development of the limbs, trunk, and organs.

The human foot, having much rough work to do, is less highly specialized than the hand, less even than in some animals, where it has prehensile power, and serves not only for locomotion but as a sort of hand.

Some remnants of this prehensile power persist in the new born infant, whose toes are constantly spreading and closing, opening and shutting, and the movements of whose great toe suggest those of the thumb.

These movements may persist and become highly developed as in certain savages who do not clothe the feet, and in certain individuals, such as those who have no use of the hands, but in civilized man whose feet are confined from childhood all freedom of movement of the toes is prevented and they soon become helpless appendages, more or less deformed from restraint and compression.

As the foot loses its rudimentary prehensile powers, its intrinsic muscles, about as numerous as in the hand, waste away, and its sustaining, steadying power, diminish.

Effect of wearing shoes.

It seems to be taken for granted by large numbers of people that more or less discomfort in the feet is inevitable. Like those born color-blind, they suppose that everyone is made that way. And it is a fact that practically every shoe-wearing foot is more or less imperfect in function, and deformed in shape. Shoe-wearing is not the only cause of foot weakness and distress, but it is such a common cause that it merits investigation in some detail.

In general, shoe-wearing, by preventing the adjustment of the foot to varying surfaces, and interfering with its propulsive function and with its circulation, hinders development and causes atrophy not only of the structures of the foot, but of the leg muscles in relation with it. The sustaining power of the foot suffers and, when it is unequal to the load imposed upon it, the foot gives way in its weakest parts. The longitudinal arch of the foot flattens down, the inner edge of the foot, which was not intended directly to sustain weight or to come in contact with

the ground, sinks down until it bears pressure, the foot turns and rolls outward, the bones are brought into abnormal relations, discomfort, pain, stiffness, disability result. Thus weak-foot and flat-foot may result from imperfect use and development of the feet, one cause of which is shoe-wearing, another cause is the hard, even surfaces of city sidewalks, with which the feet are constantly hammered and always in nearly the same way, instead of the varied motions required by yielding and uneven ground. The inner side of the foot is the weaker side, it yields, the arch sinks, the feet turn out, the calves atrophy, strain is put on the inner sides of the knees with a tendency to knock-knee, and the posture and muscular action of the whole body receives a vicious bias. Weak feet are one cause of knock-knees.

So much for the general effect of confinement and monotony of action.

Shape of the normal foot.

The outline of the naked normal foot is wedge-shaped, with the apex at the heel. The base of the wedge is not straight, but slopes toward the small toe. The inner edge of the foot is practically a straight line from great toe to heel. The toes at rest lie straight like fingers, radiating and somewhat separated like the sticks of a fan. The foot is well arched on the inner border, and bears weight on the heel, outer edge and ball. It is also arched transversely across the ball of the foot, though this is less apparent. With relation to each other the feet should lie nearly parallel, at least in walking When weight is borne, the arch of the foot spreads somewhat, recovering when the weight is removed.

Special deformities and painful affections due to shoes.

It is obvious that most shoes interfere with some of these charcteristics of the normal foot.

The toes are cramped, compressed and curled up from insufficient room in length, breadth, or both. Pointed or short shoes are a common cause of hallux valgus, deformed great toe, and of bunions, enlarged and often painful great toe joints. Insufficient breadth curls the small toe and often causes a corn on its dorsum. All the toes are crowded together so that they lose their natural outline, and become shaped by reciprocal pressure. Corns or calluses are formed over the parts most exposed to pressure, and pressure is one cause of ingrown to-nail. There are other painful affections more or less dependent upon improper foot-gear. One of these, Morton's toe or metatarsalgia, is due to pressure on a small nerve usually under the fourth toe; it sometimes causes pains radiating up the leg.

When the great toe is forced inward and thrown out of action by a pointed shoe, a powerful support to the inner edge of the foot is removed, and the sinking of the arch, and outward turning and rolling of the foot, ending in flat-foot, is rendered easier.

The net result of average shoe-wearing, even when gross deformities are not apparent, is a weakening of the foot and loss of elasticity. The tendency is to use the foot more as a prop and less as a propeller; and the action of the legs, indeed, the attitude and movement of the whole body are profoundly affected. High heels, happily less fashionable than formerly, do this directly.

Points of a good shoe.

The principal point should be behind rather than in front. That is, the heel-cup should be narrow, snugly holding the heel in its place. The posterior part of the foot does not expand in walking, and has no appendages; it should be held in its snugly-fitting heel-cup by a well laced and not too roomy upper. If the ankle and instep leather is too large, the foot slides, forward and the shoe becomes, in effect, too short.

Laced shoes are better than buttoned, since if correctly fitted the slack can always be taken up. The outside heel should be low and broad. The shoe should be nearly straight on the inner edge, and broad across the ball. It should be long enough and to spare, not too pointed, and the tip on a line with the inner edge, not with the middle of the foot. The leather over the toes should be boxed up. The shoe should not be curved up in front, and the sole and shank should not be too thin. Ankle shoes are better than low shoes, as a rule, since they hold the foot more securely in place. Their drawback is imperfect ventilation, a bane of all shoes. Too big a shoe is almost as bad as too small a one. Commercial shoes are on the average of much better shape at present than a few years ago, and are on the whole improving; they are usually too tight in front and too large behind. The so-called natural, or waukenphast, comes nearer than the old-fashioned shape to what is required.

Special shoes.

The shoe is not an orthopedic instrument, and the effort of dealers to treat foot deformities by specially constructed shoes are usually futile and sometimes harmful. The commonest commercial modification is the "stiff-ankled" shoes for weak ankles, for which there seems to be a large and constant demand on the part of anxious parents. The writer sees them used for almost every conceivable affection below the waist-line. They are, in his opinion, never of the slightest benefit.

In weak feet or weak ankles, the inner ankle bone becomes prominent and the foot points outward. The patient should walk toeing in, also on the balls of feet, also rise on the balls of the feet with the heels turned outward. These and other exercises should be done in bare feet or with stockings only. It is frequently a good plan to raise the inner edge of the shoe a quarter of an inch to help throw the weight on the outer edge of the foot and to turn the foot inward.

Toeing out and toeing in.

Toeing out is the position of weakness; toeing in the position of strength. That is, within limits, the elasticity and resistance of the foot and muscular play of the leg is increased by toeing in. Good runners toe in. Toeing out tends to produce knock-knees, toeing in bow-legs, a less serious affection. Per contra knock-knees tend to produce eversion, and bow-legs inversion of the feet. When the feet are weak, however, with or without knock-knees, the natural tendency to toeing out may be voluntarily or unconsciously resisted and the child walk pigeon-toed as a protection to its weak feet or knees. Here is seen the futility of the shoemakers' attempts at the correction of this condition, since it may be

a really favorable position for the feet. An expert examination of the lower extremities will alone decide. Unless very decided, or due to bow-legs, toeing in had best be left alone. Normal children and children with a tendency to weak feet should be encouraged to run on uneven ground, and taught to toe straight ahead or slightly inward. A romp night and morning in bare feet is a help, and the babies should be without foot-covering until they walk. At the seashore or in the country going bare-foot is a wholesome exercise.

The esthetic side of it.

Enough has probably been said to convince the reader that without well-shapen, strong and elastic feet, a graceful carriage and locomotor endurance are impossible. It would seem to be unnecessary to assert that weak and deformed feet are devoid of beauty, and that the natural shape and movements of the feet are more attractive than any that can be artificially imparted to them. Leaving this one side, however, it must be conceded that grace and endurance can only be attained by a reasonable care of the natural shape and powers of the feet.

Practical value of serviceable feet.

It would be interesting to compute the economic loss to a community through preventable weakness and painful affections of the feet.

Take a class of individuals like trained nurses, whose ability to perform their duties lies in having feet that will do their work without complaining; how many amongst them lose days and weeks every year from corns, bunions, or flat and painful feet? Certainly a great many. This was recognized as a practical matter by one of the Boston training schools, and Dr. R. W. Lovett, a skilled orthopedic surgeon, was asked to take charge of the feet of all the nurses in the training school. He consented only on the condition that every nurse should follow his directions absolutely in regard to the kind of shoes she should wear. As a result, cases of foot disability and inability to work for longer or shorter periods, which previously had been common, were reduced to practically none the first year this plan was adopted.

Policemen are often laid up from painful affections of the feet, and an eastern city is said to find it advantageous to pay a skilled orthopedic surgeon his full office fees for caring for the feet of disabled officers. Flat feet and other disabling affections of the feet are very common in bakers, waiters, servants, and all those who are much on their feet, and at the same time habitually wearing bad shoes. Other causes of these affections are increased tenuity or diminished resistance of the tissues from some constitutional cause, such as rickets, or the paralysis of the muscles. In a word, any thing or things which bring about a disproportion between the weight and the resisting power of the structures bearing it may produce weak, painful and deformed feet, and particularly flat foot.

The gymnastic and military foot.

We owe the pernicious idea of the desirability of toeing out to the dancing-master and the drill-sergeant, with the able co-operation of mothers and teachers. It may well be that for temporay and special purposes this position has its use. It affords lateral stability to a file of men

standing at attention, but we are of the opinion that a smaller angle than is at present advised will be found advantageous to most military and gymnastic purposes, especially in marching. It should not be forgotten that gymnastic drill has been largely influenced by military ideals.

The integrity, competence and endurance of the soldier's foot is of fundamental importance, and in order to get protection, elasticity, and muscular control, the foot should be well pointed forward in marching.

Too much attention cannot be bestowed on shoes in military and gymnastic work.

The foot in art.

One hardly realizes the defects and imperfections of the civilized human body until one seeks a perfect model for artistic portrayal, as do painters and sculptors. For, while the artist is not slavishly bound to his model, but generalizes and idealizes, yet he is strongly influenced by the qualities he finds constantly repeated. It is difficult in modern sculpture and painting to find an anatomically correct foot, the deformities impressed upon the foot by shoe-wearing are reproduced in works of art, and particularly the deformed great toe, marring the perfect line of the inner border of the foot.

The sandal did not produce this deformity, consequently we find the feet of Murillo's sandaled monks, and of the ancient masterpieces of sculpture, freer from this defect.

The statute of Melager, from the early Roman period, and now in the Vatican, has been chosen for reproduction this month mainly because it correctly exhibits the main features of undeformed feet.

To study the natural foot, however, we must observe the feet of barefooted infants and savages.

Woman as she is shod.

"I need not comment on the evil effect of the ordinary woman's boot. If one desired to invent a boot calculated to throw the foot over to its inner side and weaken the muscular support, he would select a boot with a pointed toe, having the point near the middle of the foot; the sole should be narrower than the boot in front; the shank should be weak and cut away inside, and the forward part should not be adducted upon the posterior part. Such a boot crowds the great toe outward and removes the buttress which keeps the inner border of the foot from rolling over. It crowds together the ends of the metatarsals and in general favors both coersion and abduction. The earlier in life such a boot is worn, the greater the harm."—Dr. Robert W. Lovett, in *New York Medical Journal.*

MECHANICS OF THE FOOT.

In estimating the relative ability of a foot from the mechanical standpoint, it will be evident that valgus must be a source of weakness because the weight of the body is improperly distributed on the foot, that abduction is a source of weakness because the strain of the calf muscles tends to

bend the foot laterally, and that a low arch may be a source of weakness because the lax ligaments do not hold the joints properly. These three elements combined in varying degree make up the typical flat-foot deformity, but they are by no means always combined. Valgus may accompany an exaggerated arch, and valgus with abduction is the condition often found in the so-called sprain of the ankle.

Restriction of motion and improper attitudes, whether voluntary, the result of habit or involuntary, because of pain or weakness or permanent change in any of the structures that make up the foot, are sources of weakness because they prevent the proper alternation of attitudes. All the elements of weakness may be found in developed flat-foot, and they must be overcome before it can be cured. Any of the elements of weakness may cause symptoms of disability and ultimately lead to deformity.

It must be very evident that the foot may be abused and deformed and yet be able to perform its work : the predisposing causes of weakness are present, yet because little is required of the mechanism it is still efficient. It needs, however, but temporary weakness or slight injury or over-work to give the impulse, and the foot breaks down. Thus symptoms of the weak or flat foot may develop at any age, in the robust as well as in the anemic individual, and it is thus explained why the very evident weak and flat foot of childhood often causes no symptons until the poriod of rapid growth and increased weight of adolescence, or later when the life occupation is begun.

One of the most frequent improper postures is that of exaggerated eversion of the feet, which is not only an ungraceful attitude, but a direct cause of weakness. The opposite attitude of inversion of the feet, the so-called " pigeon-toed " walk, is most offensive to relatives and friends, and it is for the correction of the attitude that the child is brought for treatment. This attitude is in many instances a sign of the weak foot, for on examination the bulging an the inner side, the inversion of the leg in its relation to the foot, and the flattened arch, show very plainly that it is the foot and not the attitude that requires treatment, and that the attitude in this class of cases is really a safeguard against increasing deformity. which will correct itself when its cause is removed. Particular emphasis is laid upon this point, which is very generally overlooked because the routine treatment of pigeon-toes in these cases might be the cause of direct harm.—Dr. Royal Whitman, in *New York Medical Journal.*

ANAEMIA AND ITS TREATMENT.

BY DEERING J. ROBERTS M.D., NASHVILLE, TENN.

There are few practitioners of any experience who have not from time to time had to contend with anæmia in some of its forms, either as a primary or essential anæmia. chlorosis, etc. : or a secondary or symptomatic. This pathological condition is characterized by a diminution or deterioration in the quantity or quality of the blood or one or more of its constituents, either as a result of no known pathological condition of

other tissues or organs than the blood itself; or as a result of (*a*) hemorrhage; (*b*) inanition or want of assimilation; (*c*) excessive albuminuria, prolonged suppuration, long-continued lactation, chronic dysentery, etc.; or (*d*) toxic agents, as the absorption of lead, arsenic, mercury, and phosphorus, and the toxic influence of acute and chronic infectious diseases, as typhoid and yellow fever, diphtheria, acute inflammatory rheumatism, chronic malaria, tuberculosis and syphilis. The general practioner, the surgeon, the obstetrician, the gynæcologist, and other specialists, all will continue to meet with it from day to day, and it will often prove, unless promptly and efficiently met and combated, "the last straw that breaks the camel's back." After other serious involvements of regions or viscera have been safely tided over, and the original danger is well and satisfactorily out of the way, anæmia may still bar our progress in establishing a successful restoration to health.

The pallor of skin and mucosa as indicated by the general surface and livid lips, the languor, debility, and extreme fatigue under the slightest exertion, occasional palpitations, dyspnœa, headaches, anorexia or possibly perverted and unnatural appetite, the visible undulating pulsations of the carotids, the pulsation of the peripheral veins, the occasional heart murmurs, the "*bruit de diable*" or venous hum over the large cervical veins, both muscular and mental weakness, loss of or impaired nerve function, neuralgia, coolness of surface, the weak, thready or compressible pulse, together with constipation or occasionally its opposite, make up, as a whole or in part, a clinical picture that is usually readily recognized by any careful observer.

Should the diagnosis, however, be in any doubt whatever, a proper laboratory examination will show a diminution of (1) the total quantity of blood in the body *oligæmia*; (2) of the red corpuscles, *oligocythæmia*; (3) of the hæmoglobin, *oligochromæmia*; (4) of the albumen, *anhydræmia*; (5) or changes in the shape of the red corpuscles, *poikilocytosis*; (6) or in their size, *micro-*, *macro-*, or *megalocytosis*. It is rare, however, that so thorough an examination is necessary; and many of us, especially those engaged in active practice, have neither time nor opportunity for such an investigation, and rely on the general characteristic features presented together with the previous clinical history.

In the treatment of this condition iron in some form has long been a recognized essential remedy, and a most excellent one it has proved on many occasions; yet sometimes it brings only disappointment, either from the inability to get the patient to take it in sufficient quantity, or from failure to secure its entrance into the circulation by the absorbents, or from bringing about other symptoms that add to the discomfort and danger impending, as irritability of the bowels, diarrhœa or its opposite, or from its astringent effect on the mucous lining of the alimentary tract, interfering with the proper digestion and assimilation of the limited food supply that is tolerated by the patient.

More than half a century ago M. Burin Buboisson demonstrated by chemical analysis the recognized fact that the red corpuscles of the blood contain about one-twentieth as much manganese as iron. Nature never doing anything uselessly or unnecessarily, we can but recognize it as one

of the essential constituents of the blood; and when its preparation is lessened by hemorrhages and other conditions that impair the blood, its restoration through natural channels is but slow and uncertain, so that it is quite a natural suggestion to take steps to secure its re-establishment in proper proportion. Soon after its demonstration as existing in the blood, M. Hannon and others used it with satisfactory success in chlorosis, syphilis, scrofula, and other similar conditions. Kugler, in 1838, noticing that individuals employed in bleaching establishments where chlorine was largely used, and in those who handle large quantities of the salts or oxides of manganese, were free from diseases of the skin, bones, and glands, made a successful trial of it in scrofula. The various salts or oxides of manganese used from time to time being deficient in stability or difficult of assimilation, its use has not been altogether satisfactory until quite recently.

A little over a year ago I received from Messrs. M. J. Breitenbach Co., of New York, a preparation new to me, bearing the name of "Pepto-Mangan, Gude," prepared by Dr. Gude, Chemist, of Leipsic, Germany. The *claim being made* that it was a *combination of iron an manganese* as true peptonates, having decided advantages over the preparations of iron, even the albuminate, in both permanency and ease of assimilation. It is clear, of a rich sherry-wine color, neutral in reaction, free from astringency, and of a pleasant aromatic taste. It is also claimed for this preparation that "it is a powerful blood-forming agent; a genuine hæmoglobinogenetic; feeding the red corpuscles with organic iron and manganese, which are quickly and completely absorbed in cases of anæmia from any cause, such as chlorosis, amenorrhœa, dysmenorrhœa, chorea, Bright's disease, etc."

Dr. H. P. Loomis, of New York, in a paper read before the Section of General Medicine of the New York Academy of Medicine, speaks of it most favorably and reports a series of eight cases (Bellevue Hospital) in which anæmia had resulted from various causes and the number of red corpuscles had been markedly reduced from more than twenty-five to near fifty per cent, as demonstrated by careful count by proper laboratory apparatus, and that under the use of "Pepto-Mangan, Gude" in six to eight weeks they were restored to the normal or increased beyond it. He concludes the paper with the following:

"In most cases the Pepto-Mangan (Gude) had no constipating effect. Of the eight cases of which accurate notes were kept, all showed a marked improvement both in the increase in the amount of hæmoglobin as well as increase in the number of red blood corpuscles. The average increase of the hæmoglobin was 22 per cent and of the red blood corpuscles 1,258,000."

Dr. Hugo Summa, of St. Louis, in an article in the *New York Medical Journal*, reports having treated thirty-four cases with Pepto-Mangan, Gude, partly cases of chlorosis and partly cases of secondary anæmia, occurring chiefly after subacute malarial and typhoid fever. Two cases of chlorosis and four of secondary anæmia he gives in abstract, in all of whom there was great improvement or complete recovery.

He says: "In conclusion I should like to state that similar good results were obtained in the remaining twenty-eight cases. It is especially worth while mentioning that no bad after-effects could be detected. In this connection I call special attention to the absence of constipation that could be traced back to the use of this preparation. The dose varied from a teaspoonful to a tablespoonful three times a day an hour after meals, either in sherry or milk, according to the individual case, especially according to the condition of the digestive organs."

Dr. Chas. O'Donovan, of Baltimore, Md., in *The Medical News* of November 27th ult. and in April, 1889, speaks very favorably of the use of manganese in certain cases of dysmenorrhœa. The articles are too long for even brief abstract, yet it is a well-known fact that, as a rule, dysmenorrhœa, when not due to structural lesions of the uterus, or displacements, stenosis, etc., can with almost unerring certainty be traced to be dependent on an altered, depraved or deficient condition of the blood.

A CASE OF SEPTICEMIA POST-ABORTUM.

BY ROBERT H. LAWRENCE, M.D., CHICAGO, ILL.

Mrs. D. A., age 23. Married 5 months. Aborted October 1. Was called to see her at noon, October 5. Found patient in bed, great difficulty in breathing, with pain in abdomen which was very tympanitic and sore, foul odor—very noticeable during examination. Gave history of previous good health, but continuous flow of blood from vagina for 5 days. On examination found clots of retained placenta. Temperature 103°. Pulse 122. Used curette and gave carbolized douche. 8 p. m. Temperature 104°. Pulse 150 Gave stimulants and intra-uterine douche Borolyptol ʒii, and vaginal douche carbolized water. Consultation with Dr. H. P. Nelson. Prognosis very doubtful. Diaphoretics and stimulants ordered every half-hour.

Same day, 11.30 p. m. Temperature 101.6°; pulse 126. Vomited freely, mild perspiration, light sleep.

October 6, 5 a.m.: Temperature 104.4°; pulse rapid and weak, skin dry—ordered diaphoretics every 15 minutes for 4 hours, and stimulants every hour. Surrounded with hot-water bottles.

2.30 p.m.: Temperature 164°. Diaphoretics every 15 minutes. Stimulants every half-hour. Intra-uterine douche Borolyptol ʒii. 6 p.m. Temperature 103°; pulse 130.

Consultation with Dr. A. McDiarmid. Curetted again under full anesthesia and used 1.3000-bichloride solution as douche—this procedure was followed by a severe chill, abdominal tenderness and involuntary bowel evacuations. At 8.30, temperature had risen to 105.5°; pulse 140.

October 7, 10 a.m.: Temperature 100.2°; pulse 108. During the day temperature rose gradually, and at 6 p.m. was 104.4°. Then gave intra-uterine douche bichloride 1.4000, which was followed, as before, by very severe chill, abdominal pain and involuntary bowel movements; at 9 p.m., temperature had risen to 106.4°, pulse 150, respiration 36; patient very restless.

October 8, 1 a. m.: Temperature 102.6°; pulse 120. Stimulants and diaphoretic continued, but hot-water bottles removed. Temperature at 2.30 p. m. had dropped to 101°. Intra-uterine douche Borolyptol ʒii. Vaginal douche Borolyptol solution. After this temperature continued below 100° until October 9, at 11 a.m., when it rose to 102.8°. Borolyptol douche repeated, several large clots washed away, no pain, no chills as after bichloride, but a rather restless night. Temperature continued low until noon, when Borolyptol intra-uterine douche again repeated, after which patient slept for 3 hours.

October 10, 10 a. m.: Temperature 100.2°. Borolyptol ʒii intra-uterine douche and a similar douche at 10 p.m. These douches were repeated twice a day until October 15, during which time temperature did not rise above 100°, discharge gradually decreased, and my attendance ceased October 21, when patient had fully recovered.

I am very much pleased with the action of Borolyptol in this case as compared with mercuric bichloride—no pain, chills, or rise of temperature followed its use, and its action was in every way superior to that of the sublimate.—*American Gynecological and Obstetrical Journal.*

BUBONIC PLAGUE IN 1141 B.C.

BY FRANK TIDSWELL, M.B, CH. M. SYD., D.P.H. CAMB., AND JAMES ADAM DICK, B.A SYD., M.D., C.M. EDIN., JOINT HON. SECS. OF THE MEDICAL SECTION OF THE ROYAL SOCIETY OF NEW SOUTH WALES.

In a few of the many articles on plague which had recently appeared in the medical press, there has been reference to certain passages in Holy Writ which contain a description of what has been regarded as an epidemic of bubonic plague. Some three years ago we collected notes concerning the history of plague, and, *inter alia*, some upon the passages in question. For various reasons the notes were not published at the time they were written, but we now venture to submit them for your consideration. But before proceeding to discuss the passages themselves, we would call attention to such characteristics of plague as seem to have bearing on their interpretation.

Bubonic plague is a disease which has been known and dreaded for many centures on account of its tendency to occur in widespread epidemics causing immense loss of life. Usually these epidemics have appeared quite suddenly, spread like wildfire, killed thousands of men and lower animals, and after a few years disappeared again. But although attracting special attention only at the times of its epidemic prevalence, the disease does not die out altogether in the intervals. It merely becomes restricted in its incidence to certain areas which constitute its endemic seats or centres, and within which it is constantly in existence. At the present time there appears to be five such centres; one in the north of Africa in the Bengazi district, one in the Azir district of Arabia, one in the mountains of Khurdistan in Persia, one in the Himalayas in India, and one in the Yunnan district of China.[1] All the more recent epidemics have been traced to one or other of these centres; the most recent, that

which appeared in China in 1894, and is still prevalent in India, and has spread to Egypt and Portugal and other places, is said to have had its source in the Yunnan centre, where plague is known to have recurred every year since 1860.[2]

This last epidemic in India has furnished the opportunity for the study of the disease by modern methods of research. As all the world knows, the specific microbe has been discovered, a method of protective inoculation devised, and two different curative serums prepared. Further, the disease has been found to have at least three clinical varieties—septicæmic, pulmonary, and bubonic, which, however, are usually more or less combined. The general tenor of the reports is to the effect that plague appears as a serious disease, characterised at times by very rapid prostration, collapse, coma, and death within 24 hours of the onset;[3] at others enduring longer, in which case the classical buboes are apt to appear. The buboes are usually to be found in the groins, but may occur in the armpits, along the neck, and elsewhere. The other striking feature of the disease is hæmorrhage, which may take place from all the orifices of the body—nose, mouth, bowel and bladder, or beneath the skin, or internally.[4] The epidemic fatality is excessive, from 50 to 90 per cent. of attacks proving fatal.[5]

Epizootics on cattle, sheep, mice and rats, precedent to, or coincident with, the outbreak of the disease in man, are recorded in many of the older reports, often under the designation of "murrain." Recent accounts contain the same statements.[6] Observations made during the present epidemic in India have shewn that the disease in rats is due to the same cause as in man, viz., infection with bacillus pestis bubonicus of Kitasato.

Briefly, then, plague presents itself as a very severe disease, more or less sudden in onset, attacking both men and lower animals, having a high fatality, and in man specially characterised by bubonic swellings and hæmorrhages.

Now these are the symptoms which have been associated with plague from time immemorial. In comparing the features of the present epidemic with those described by the earliest writers, one cannot fail to be struck by the remarkable fixity of type displayed by plague throughout past ages. The definition of plague given in the last edition of Quain's Dictionary of Medicine published in 1894, refers to it as a "specific fever, attended by bubo of the inguinal glands, and occasionally by carbuncle." A description written in 280 B.C., refers to it as "pestilentes bubones, maxime lethales et acuti."[8] Intervening between these two, there are a whole series of accounts in which there is always the same record of a serious epidemic disease, with buboes and sometimes hæmorrhages. The writings of Defoe,[9] Sydenham[10] and Thomas Lodge,[11] have made us familiar with the disease as it appeared in the 17th century. From the 14th century come the numerous records of the terrible "Black Death," which is said to have killed 25 millions of people,[12] and of which Giovanni Boccaccio has left us so excellent a description in his introduction to the Decameron. From the sixth century we have many accounts of the epidemic which overran the Roman Empire in Justinian's time,[13] and which is said to have "depopulated towns, turned the country into desert,

and made the habitations of men to become the haunts of wild beasts."[14] The frequent use of such terms as "pestis inguinaria," "glandularia," "clades inguinaria," "pestis bubonicus," in the chronicles of the period, sufficiently indicate the nature of the disease. This sixth century epidemic appears to mark the first visitation of the disease to Europe, but plague was known to exist in Egypt long before this time. Through the writings of Oribasius, physician to the Emperor Julian, there has come down to us a description of plague by Rufus of Ephesus, based on observations made by two physicians, Dioscorides and Posiedonos, who lived during the first century A.D. Rufus also mentions that the disease was well known to the contemporaries of Dionysius, as existent in Egypt, Lybia, and Syria in their times, the third century B.C.[15]

According to Hirsch the distinguished epidemiologist, there are no certain references to plague in earlier medical or historical writings. He considers the mention of buboes by Hippocrates as too indefinite to merit reliance. It may be taken, therefore, that the authentic record of plague has not been traced back beyond 300 years before the time of Christ.

The passages in the Scripture, mentioned at the outset of this paper, appear to signalise a still earlier epidemic. They occur in the First Book of Samuel (ch. iv. to vi.), and narrate the defeat of the Israelities and the capture of the Ark of the Covenant by the Philistines at Ebenezer in about the year 1141 B.C., and they tell of the events that occurred subsequent to the arrival of the Ark in Philistia. The Ark was first taken to Ashdod, and to its presence in that city was attributed the severe illness that broke out amongst the people. "The hand of the Lord was heavy upon them of Ashdod, and He destroyed them and smote them with emerods even Ashdod and the coasts thereof" (ch. v., 6). Terrified by this disaster the people of Ashdod sent the Ark to Gath, and here also the disease appeared. "The hand of the Lord was against the city with a very great destruction and He smote the men of the city, both great and small, and they had emerods in their secret parts" (v. 9). The Ark seems to have been afterwards carried from place to place until it finally reached Ekron and here again we are told: "There was a deadly destruction throughout all the city, . . . and the men that died not were smitten with the emerods, and the cry of the city went up to heaven" (ch. v., 11, 12). After seven months' experience of "destruction" and "emerods," the Philistines decided to send away the Ark, to the presence of which amongst them they attributed their illness. Accordingly the services of "priests" and "diviners" were requisitioned to decide as to the best means of restoring the Ark to the Israelites. They advised that, in addition to the Ark, a trespass offering should be sent, to consist of "images of your emerods and of your mice that mar the land." This advice was followed, and the Ark, together with the images, went back to Israel on a new cart drawn by two milch kine. The Philistines accompanied the Ark on its journey as far as the borders of Bethshemish, where it arrived at the time when "they of Bethshemish were reaping their wheat harvest" (ch. vi., 13). The Israelities took down the Ark and the coffer, and "clave the wood of the cart and offered the kine as a burnt offering unto the Lord" (ch. vi., 14). Amongst the people of

Bethshemish there followed a severe disease of which many died, but no particulars of its nature are given. In response to a message men came from the neighbouring city of Kirjath Jearim, and conveyed the Ark to the house of one Abinadab; where it was kept under special guardianship for twenty years.

The accounts of these events in the LXX (Septuagint), and in the authorized and revised versions are practically identical, but in the revised version the word "tumour" is used instead of "emerods," and a marginal note adds "or plague boils, as read by the Jews emerods." Josephus[16] refers to the epidemic amongst the Philistines as "a very destructive disease," "a sore distemper that brought death upon them suddenly," for the people "died of dysentry and flux," and before death "brought up their entrails and vomited up what they had eaten and what was entirely corrupted by the disease." Thomas Lodge in his translation of Josephus,[17] says, "the people being suddenly taken with this flix died in great torment, and some of them vomited up their bowels being corrupted and corroded with the disease." Both translations refer to the mice as destroying the crops, and to the images sent with the Ark to Bethshemish.

The medical evidence furnished by these accounts indicates that the Philistines suffered from an outbreak of epidemic disease. This disease was of sudden onset and marked severity, for it "smote" men with "a very great destruction." It was of wide and rapid spread, for in seven months (four according to Josephus) it became so disseminated as to create public alarm. A special assembly of priests and diviners was convened to deal with it, and the Philistines were induced to part with a war trophy—the Ark—on which they must have set a very high value. The physical symptoms, (i.) emerods in secret parts, (ii.) vomiting of foul material, and (iii.) dysentery or flux, need some discussion.

(i.) The word "emerod" has usually been taken to mean hæmorrhoids that is piles, but this has been contested. It is to be noted that the original connotation of the Greek word is not "piles" but "a flow of blood," just, indeed, what Josephus may be supposed to mean by "dysentery or flux." It is significant that Josephus makes no mention of emerods but only of dysentery, that is, he gives the word its correct Greek interpretation. Nevertheless, emerods must mean tumors or swellings, since the Philistines were able to "make images of their emerods." Dr. William Smith[18] states the word has affinities with Hebrew roots signifying anus or nates (secret parts), and in his discussion of the affliction of the Philistines he comes to the conclusion that "some morbid swelling seems to be the most probable nature of the disease." In default of any better explanation he appears to have accepted the conjecture that "hæmorrhoidal tumours" are meant. He mentions that Wundebar refers to a bloodless kind of emerod distinguished by the Talmudists as very dangerous, and this kind he (Wundebar) supposed to be referred to in the description of the disease in the First Book of Samuel. But the fact is the word "emerod" is exactly comparable to our own word "tumor" in that it has no exact significance. It has already been mentioned that the revised version has tumor or plague boil instead of emerod. It is significant that in India a local name for the plague is the boil.[19] The

Rev. W. G. Maconochie, M. A.,[20] informs us that the Hebrew word occurring in the description in Samuel is "Ophel," which originally meant a hillock or swelling, but has acquired a wider sense, and has amongst others been used to designate hernia. Consequently it might well have been applied to bubonic swelling in the groin, which resembles hernia in appearance. Prof. George Adam Smith, D.D., of Glasgow[21], would also translate as swellings or boils. Professor Cosh[22] writes: The Hebrew words used to designate the disease are ŏphel and its plural form ŏphālim. In the singular ophel means something swollen; in the plural it is used as the designation of the disease in question (I. Sam., v., 6, 9, 12; vi., 4-6; Deut. xxviii., 27), and is understood to denote a swelling of some sort, a tumor or boil or tumors or boils. The remarks of Dr. William Smith concerning the affinities of the word with others signifying nates, suggest the site of the swellings. The "secret parts" were probably the nates or groins, the commonest sites for plague buboes. Referring to the incident, Professor H. P. Smith says: "We can hardly go astray in seeing in it a description of the bubonic plague" (Intern. Com. on Sam., p. 40), an opinion which is shared by Professor Kirkpatrick, of Cambridge.[23] From these considerations we think it may fairly be inferred that the "emerods" were really the glandular buboes of plague.

(ii.) The vomiting of "corrupted or corroded matter" denotes hæmatemesis. The vomit of plague contains altered blood ("black vomit"), and is said to have an extremely foul odour, so that it might justly be referred to as "corrupted matter," this expression being in common use amongst older writers to indicate hæmatemesis.

(iii.) By dysentery or flux is meant the passage of blood by the bowels. The description informs us, therefore, that hæmorrhage occurred both per os and per anum, a condition of affairs characteristic of plague

A still further point in favour of plague is *the season of the year* at which the epidemic occurred. This is fixed by the mention of the arrival of the Ark at Bethshemish at the time of the wheat harvest, which in Palestine is long, and in Philistia is from April to June.[24] The disease had prevailed amongst the Philistines for the previous six or seven months, that is from November or December till May or June. The plague season in Egypt, Syria and Asia Minor generally, is from November to June or July.[25] Consequently the epidemic in question was incident on the Philistines at the time of the regular plague season.

An interesting point is the mention of mice in relation to the epidemic. There is only one such reference, viz., that which occurs suddenly and unexpectedly in connection with the images to be sent with the Ark. The expression is "mice that mar the land" ("earth," as Principal Kinross[26] would also translate), and it has usually been assumed that this indicates the destruction of crops, fruit, etc., by mice in large numbers.[27] We know that mice can so destroy crops, but it has been questioned whether this is what is meant by the reference. Professor Cosh[22] writes: With reference to the 'mice,' the word ('ak-l're) etymologically denotes 'a burrowing animal.' In the description given of the plague itself in the Hebrew Bible no mention is made of mice. It is only when we come to the question as to the offering to be made in

expiation of the wrong done to Jehovah by the detention of the Ark that the word mice occurs. The offering prescribed was five golden ŏphālîm and five golden 'mice.' If the Hebrew represent the correct form of the text, then the inference is that there was only one plague, viz.. that of the ŏphālîm, and that there was a double offering, one (the mice) as the general emblem of a pestilence destroying the land, and the other (the ŏphālîm) as the representation of the particular form in which this particular pestilence had manifested itself. This is the opinion of Wellhausen, and is favoured by Driver and H. P. Smith. In the description given of the plague in the LXX. the mention of mice in vi., 4, is preceded by two notices describing a plague of mice in the country (v., 6, vi., 1), and similarly in vi., 4, 5, in the LXX. separate mention is made of the golden ŏphālîm and the golden mice. But some eminent scholars think that the additions of the LXX. are interpolations of a later hand. There is nothing in the terms used to indicate that 'their land' meant the 'country' as distinguished from the 'city.' Professor Kirkpatrick also suggests that the mention of mice is merely symbolic of the destructive disease attacking the Philistines, since the mouse was the Egyptian symbol of destruction. But he admits the probability that there may have been a destruction of crops by mice. May it not be that the mice did not "mar the land" by destroying crops, but by their dead bodies and attendant putrefaction; that they did not constitute a plague, but were killed by *one* in numbers such as to excite comment? The significance of this comment not being understood by the earlier scribes and translators was wrongly interpreted, and the mistake handed down through subsequent ages. The now well-known association of great fatality amongst rats and mice in plague epidemics suggests this idea as a feasible one. The association of images of the mice with images of the diseased parts in men induces the inference that they were fellow sufferers; and so golden images were made for both after the manner that in subsequent times the Greeks made "anathemata" or "donaria"[28,29] in similar national or individual extremeties and deliverances. Against the idea of destruction of crops there is the fact that there was a harvest to reap in Bethshemish, situated a comparatively short distance off,[30] for it is scarcely likey that had the crops in Philistia been destroyed by mice those of the adjoining Bethshemishites would have escaped. However, we do not wish to press the point of the significance of the mice, it has only been mentioned as a matter of interest in relation to the subject.

On the evidence presented, it may be said in brief that the Philistian epidemic presents the usual features of plague. It was widely and rapidly disseminated, of sudden onset, great severity, high fatality, and characterized by buboes and hæmorrhages. The correspondence with other descriptions seems to show clearly and convincingly that the epidemic described in I. Samuel was true bubonic plague.

As to its source, nothing is or can be known, but the location near endemic centres, the great trade routes through, and commercial importance of Philistia were such as might easily have led to its importation. It is not difficult to understand that it would spread, but how is uncertain. Even apart from the superstition of the period, the Ark or

some of its draperies, or some of the persons who accompanied it on its journeyings, soldiers returning with spoils of war from the campaign, travellers, etc., may have been the means of conveyance of the infection. But it may have been spread in other ways of which no notice would have been taken at the time, and indeed we cannot even now boast of being informed as to all the ways in which plague is transported from place to place. There is no record as to its termination; the Philistines drop out of the narrative on the restoration of the Ark to Israel. That the disease, though introduced, did not spread amongst the Israelites is not surprising. The Bethshemishites practised, albeit inadvertently, the best possible means of disinfection when they burnt the cart and oxen. Their dread of pollution from a corpse[31] would render them most careful in dealing with the bodies, clothing, etc., of those who died. The Ark itself was put into seclusion (isolated) for twenty years at least,[32] and was no doubt handled most circumspectly by the men who conveyed it to Kirjath Jearim. These circumstances may have saved the Israelites from the disease, but in any case the end of the plague season was near, and the disease would tend to subside naturally. Its cessation is only what might have been anticipated. The assigned date of the epidemic, according to the figures made use of by the authorised version is 1141 B.C., and there is every reason for believing that this date is at least approximately accurate. Consequently, there appears to be contained in the few chapters of I. Samuel an account of an epidemic of bubonic plague that occurred over 3,000 years ago, or over 800 years previous to the hitherto accepted earliest record.

Before concluding we may call attention to a still earlier mention of emerods in the Book of Deuteronomy (ch. xxviii., 27), where it is included by Moses amongst the curses for disobedience. The verse reads "The Lord will smite thee with the botch of Egypt, and with the emerods, and with the scab, and with the itch, whereof thou canst not be healed." This language indicates that the "emerods" was a disease already well known in the time of Moses, and that it was a very serious disease, and to be dreaded as bubonic plague has always been dreaded. Hence it is possible, though it cannot be certainly stated, that emerods here also means bubonic plague. If it be so, then the history can be carried back to 4,000 years ago, at which time even it was sufficiently well known to be made use of by Moses as a menace, the nature of which could be understood by the unlearned populace. The disease may have been a familiar one in Egypt before this, and research may yet reveal still earlier records of it. Some of the celebrated "plagues of Egypt" may possibly have been due to the bacillus pestis bubonicus.

However the present paper claims to deal only with the epidemic of 1141 B.C., and to set forth the reasons which indicate that it was bubonic plague. The evidence to this effect is at least as good and valuable as much of that on which the history has been traced to 300 B.C. There is nothing in either case, which can be subjected to the rigid test of observation which alone is certain. Nevertheless, we believe that the conclusion formed is justifiable, feeling with Sir William Gowers that "Where we have no certainty, we must be content with probability, or relinquish all attempts to know."[33]

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ICHTHYOL IN THE TREATMENT OF CORNEAL ULCERS.

In the beginning of this short paper it will be well to say something about the etiology and pathology of corneal ulcers. Ulcers of the cornea occur when the stage of infiltration has failed to terminate in absorption and the overlying cornea layers have become disintegrated with the formation of an open lesion. In the beginning we find the spot upon the cornea cloudy and the surface over it dull. The epithelium exfoliates upon the surface of the affected spot and soon by breaking down of the most strongly infiltrated portion of the cornea, an ulcer is produced. Besides superficial suppuration we meet with purulent infiltration originating in the deep layers and we also have cases of total suppuration of the whole structure. It may come of purulent conjunctivitis, or it may develop from an active suppuration in deeper parts of the eye. In some cases it comes with great rapidity, as for example in a marasmic child. In many instances there has been an injury, especially by chips of stone or metal flying from a workman's hammer.

Micro organisms are the immediate promoters in the large majority of cases. There are cases, however, in which we are not able to account for their presence, but we have little difficulty in accounting for them in most cases, especially from injury by foreign bodies, or when the secretions of an inflamed lachrymal sac flow over the eye.

To diagnose a corneal ulcer is not a difficult matter. The leading symptoms are pain, lachrymation, and photophobia. With a good oblique illumination you can very readily make a correct diagnosis.

In children it is not so easily done, and in order to accomplish this, the child's head should be fixed between the operator's knees, while the body is supported by an assistant, and with the use of a lid retractor an

inspection of the cornea is easily made. The treatment of corneal ulcers is both local and constitutional, and as my paper is intended to discuss the merits of ichthyol as a local measure I will endeavor to say a few words in its behalf.

Ichthyol is a distillation product prepared from a bituminous mineral, found in the mountainous region of the Tyrol which is rich in fossilized remains of fish and sea animals whence the name "Ichthyol." By dry distillation of this bituminous mineral a crude volatile oil is obtained which at a temperature of 212 degrees F. is treated with an excess of concentrated sulphuric acid forming ichthyol—sulphonic acid. This latter substance unites with the alkaline basis, and forms ichthyol salts of which the principal ones are ammonium ichthyol-sulphonate and sodium ichthyol sulphonate, the former being always understood when the term ichthyol is used alone. These substances are both rich in sulphur. Ichthyol is readily soluble in water and mixes well with glycerine, lanoline, vaseline and other oils.

Ichthyol has antiphlogistic, anodyne, antiseptic and astringent properties. Its peculiar virtues are largely due to the amount of sulphur it contains. Unne says, "when applied locally it acts as a reducing agent and exerts a peculiar contractile effect upon the vascular tissues; hence the application of ichthyol is followed by a diminution of heat, a reduction of swelling, a paling of the tissues and a relief of pain."

The drug undoubtedly inhibits bacterial development, as proved by the experiments of Fessler and Klein.

Neisser states that a one per cent solution will destroy gonococci.

Ichthyol is not only peculiar in its origin, but in that it pos-esses so many widely different therapeutic properties, although not a panacea, it has established itself as one of the most valuable therapeutic agents at the command of the busy practitioner.

My attention was called to the use of ichthyol in ophthalmological work about eighteen months ago in an extract from a paper written by a French writer, who had used it, and was advocating it as a remedy for trachoma. I at once applied it according to his method in an old case of trachoma in which there was swell corneal ulcers and pannus. The improvement in the ulcers was so marked that I decided to test its merits as a remedy for corneal ulcers, regardless of the cause, and during this time I have used it in a great many cases and some of which are very severe, and my results have been phenominal. The strengths I have been using it in varies from ten to fifty per cent. My first experience with the drug in eye work was a fifty per cent solution diluted with glycerine and distilled water. After experimenting with the drug in different strengths I now use about a thirty per cent solution, and weaker solutions for home use. Ichthyol has no bad effect upon healthy epithelium, even in the stronger solutions. It is very painful for about one minute, but the instillation of a 1 per cent. solution of hollocain a few minutes before the application of ichthyol is made renders it much more comfortable to the patients. I say hollocian from the fact that it is itself an antiseptic and is not contraindicated in corneal ulcers as cocaine.

I don't wish to be understood that this is all there is to be done in corneal ulcers, but among the great number of local remedies that are in use, ichthyol has given the best results in my hands. Atropin is used for its anodyne effect and because it lessens the liability to iritis. Eserine is indicated instead of atropine in small sluggish ulcers unattended by active symptoms, or in cases of deep ulcers near the margin of the cornea. In strumous cases tonics should be given, such as cod liver oil, syrup of the iodide of iron, quinine, etc. *Medical Herald.*

TWO REMEDIES.

Two remedies, one an old one with new indications, should receive the careful attention of medical men. Carbolic acid has always headed the list as the most certain and powerful of antiseptics. No living thing could withstand its dose of carbolic acid.

Its very destructiveness, however, placed it beyond the reach of usefulness and safety, even in the most skillful and careful hands. Carbolic acid poisoning by accident and by absorption and burns on the hands of surgeons and others who used the drug have been so frequent and destructive as to need no further comment. The discovery that alcohol is an absolute antidote to carbolic acid should mark the greatest advancement in antiseptic surgery. The pure drug may be applied to any surface and its action arrested at any stage by applying alcohol. If accidently swallowed alcohol is its antidote. This knowledge it should be the business of every physician to make known to his patients.

In the treatment of suppurating wounds and old inflammation carbolic acid controlled by alcohol will be found of the highest value and positive cures wrought where the knife only offered hope of relief.

Another remedy long sought for and desired is to be found in in the Extract of Supra-Renal Capsules.

It is at once the most powerful, non-irritating and non-toxic of vasomotor constrictors. By the use of a three to five per cent aqueous solution of the extract inflamed mucous membranes may be bleached to a condition of complete bloodlessness.

In eye inflammations and the various forms of Rhinitis it gives relief for hours after a single application.

Its power to render membranes bloodless is greater and more prolonged than much stronger solutions of cocaine.

It is an aid to cocaine in the production of anaesthesia, but must be used as a separate application. While cocaine is by no means the dangerous drug it is often stated to be and cocaine fiends are far from being as numerous as many writers and observers among medical and laymen would have us believe, yet this remedy will do much to allay prejudice and give to the physician a more satisfactory and less expensive remedy. *Medical Herald.*

THERAPEUTIC NOTES.

Finsen's Phototherapy.

Bie (*British Medical Journal*, September 30, 1899) describes the methods employed by Finsen in treating lupus, and certain other affections, by means of concentrated light. Finsen is well known from his red-light treatment of smallpox, which was founded on the following considerations:

As the "chemical" (blue, violet and ultra-violet) rays of light are capable of causing an inflammation of the healthy skin, it might be assumed that they would be equally capable of aggravating pre-existing inflammations. In other words, if the deceased skin be protected against the injurious action of the chemical rays of light, it will be possible to diminish the intensity of the inflammation, and thus prevent suppuration. The object is, therefore, to exclude the chemical rays of light which are injurious to the skin. In the new way of treatment, devised by Finsen, these rays are now used as curative agents. The method consists in treating local superficial bacterial skin-diseases by the concentrated chemical rays of light. The experimentally proved data on which the method is founded are the following:

(1) The bactericidal property of the chemical rays of light; (2) the power of the chemical rays of light to produce an inflammation of the skin; (3) the power of the chemical rays of light to penetrate the skin. It is only when the light is concentrated in such a way that it contains as many blue, violet, and ultra-violet rays as possible that its bactericidal property becomes so powerful that it can be used therapeutically with advantage. The concentrated electric light, which Finsen now uses for patients, kills the bacteria till now examined in a few seconds, when they are spread in a stratum of agar, about one-fifth millimetre thick. In the treatment of patients sunlight is used in summer, otherwise the light of the electric arc lamps of 50 to 80 ampères. In order to avoid burning of the skin and to make the light stronger, the sunlight is passed through a convex lens, made of blue glass and containing a weak ammoniacal solution of copper sulphate. The blue color excludes a considerable amount of the red and yellow rays, and the copper solution absorbs the ultra-red rays,—the three rays which have a strong heating effect, while their bactericidal power is insignificant. For concentrating and cooling the electric light the rays are passed through quartz lenses and water.

Some 350 cases of lupus vulgaris were treated. The first patients were treated entirely by light; the same thing being done with all the slighter cases; on the other hand, in the more serious cases the treatment by light was assisted by treatment with pyrogallic acid ointment, in order to make the skin as smooth and easily penetrable by the light as possible. While one part was being treated by light the pyrogallic acid was applied to another part; when the cauterization was healed by zinc ointment this area of skin was treated by light; this treatment with ointment was deemed unnecessary for obtaining a good result, but was used because it saved much time. The ulcerations were kept clear of crusts by cataplasms of boric acid solution. The mucous membranes were touched with a solution of iodide and potassium iodide (1 :2 :2), or were treated

with the galvano-cautery. For the present, at least, only the skin, hard palate, front part of the septum nasi, tongue, and mucous membrane of the cheek can be cured by this method. In none of the cases was the treatment quite without effect, but in five the improvement was very slow. In all the 350 other cases the result was very satisfactory. The advantages of the method are, besides its reliability, its excellent cosmetic results, the infrequency of relapses, and their slight extent, and the fact that the treatment is painless. In lupus erythematosus, while the treatment was not so sure, it gave, in many cases, excellent results,—permanent recovery and firm scars. Seven cases of alopecia areata were cured, a fact which supports the theory of the infectious origin of this disease.

Eudoxine in the Intestinal Affections of Childhood.

Blech (*New York Medical Journal*, July 8, 1899) has used eudoxine successfully in the treatment of sixty-three cases of infantile diarrhea. Of these two died,—one patient with acute dysentery, seen on the tenth day, and one patient, aged nine months, with acute ileo-colitis. Recoveries took place: Thirty-eight in twenty-four hours; twelve in two days; two in three days, and six in four days. Eudoxine is a compound of bismuth and iodine, containing about 19 per cent. of the former and 50 per cent. of the latter. It appears as a reddish-yellow powder, tasteless, odorless, and insoluble in water. The dose for infants is two to three grains; for children of 5 to 10 years, three to five grains.

Thyroid Extract for Hastening Union of Fractures.

Lambret (*Écho médical du Nord*, June 11, 1899), reasoning from the good results obtained with thyroid extract, by Gauthier and others, in delayed union of fractures, decided to try the influence of thyroid medication in the treatment of recent fracture. He administered three grains of the gland, thrice daily, to a man who had broken both bones of the leg, in a railroad accident. Since perfect union was secured by the seventeenth day, he is hopeful that in similar cases the time required for union of the fragments may be materially shortened by this method of treatment.

The Uses of Naphtalan.

Merlin (*Wiener medizinische Wochenschrift*, No. 5, 1899, and *The Medical and Surgical Review of Reviews*) has experimented with naphtalan in seventy-nine cases, which comprised cases of phagedenic venereal sores, gonorrheal epididymitis, ulcers of the leg and foot, varicose ulcers, parasitic sycosis, impetigo contagiosa, acute eczema, chronic eczema of the scrotum, and burns of the first and second degrees. In venereal sores no change was produced on the progress of the sores, but in phagedenic sores with much discharge the latter was checked and healthy granulations promoted. In the cases of epididymitis the drug was applied twice daily on lint. It is quickly absorbed, and the inflammation subsides in eight to ten days; no folliculitis or irritation of the skin being produced. Ulcers of the leg and foot much inflamed and in a foul state, after being cleaned with ether, were healed in five to ten days by the application of naphtalan plaster. In cases of varicose ulcers healing

occurred under naphtalan after a previous operation on the saphenous veins by Trendelenburg's method. Good results were also obtained in sycosis and acute and chronic eczema. In a case of severe weeping eczema of the scrotum, the irritation of which caused sleepless nights, the application of naphtalan after three days enabled the patient to sleep, and the eczema was cured in four weeks. No irritation appears to be caused by the application. The burns were also benefited, and the pain soon disappeared under treatment. The writer strongly recommends naphtalan in dermatology, but it is of less value in syphilitic and venereal sores.

The Treatment of Paralysis Agitans.

COLLINS and MUSKENS (*New York Medical Journal*, July 8, 1899) report twenty-four cases of paralysis agitans, and discuss the treatment of this affection. As in all other nervous diseases, the dietetic and disciplinary treatment are of the greatest importance. The first indication is for the arrangement of an uneventful life, free from care, strife, excitement, and sordidity, in a congenial environment and healthful climate. As a rule, a cool climate is far more grateful than a hot one. The diet should be simple, nourishing, and strengthening. It is absolutely necessary that the patient has the personal care of an attendant, or one of the family. Lukewarm baths, of from twenty to thirty minutes' duration, are oftentimes soothing to the patient. In patients under 40 years of age, applications of water from 90° to 75° F. from the hand of an attendant, followed and accompanied by friction, are sometimes serviceable in combating the distressing attacks of local and general heat of which the patient complains. The authors have never seen anything but detriment attend the use of Swedish gymnastic, though gentle massage is sometimes beneficial. The most important drugs are hyoscyamus and duboisine. Given hypodermically, which is preferable when possible, or by the mouth, they promptly mitigate the severity of the tremor, and have a pronounced tendency to relax the muscular rigidity. Both drugs must be used with care. Personally the authors prefer duboisine to hydrobromide of hposcine. Of the sulphate of duboisine one one-hundredth to one-sixtieth of a grain should be given two or three time daily. On the accession of dryness of the mouth, nausea, vertigo, paresthesia, or disturbances of vision, the drug should be stopped. Bromides are powerful agents for harm. In some instances, especially when hyoscine and duboisine fail, some mitigation of the tremor and rigidity may be obtained by the use of gelsemium or veratrum viride. These remedies have been found by the authors more useful than Indian hemp.

Formalin in Surgical Tuberculosis.

HAHN (*Centralblatt für Chirurgie*, No. 24, 1899) states that he obtained excellent results from a mixture of formalin and glycerin, 1 to 5 per cent., in the treatment of surgical tuberculosis. As an injection into abscesses connected with diseased joints, the author believes that this mixture is superior to an emulsion of iodoform.

Hypodermic Use of Arsenic.

Moyer (*The Chicago Clinic*) suggests the use of a solution of the anhydrous salt of arsenate or sodium in those nervous diseases in which arsenic is indicated. A number of cases are reported in which the hypo-

dermic use of a 1 to 5 per cent. solution of this salt produced very satisfactory results where other methods have failed. Fowler's solution gave very unsatisfactory results when used hypodermatically causing cellulitis and a consequent abscess, in all probability due to the presence of arsenious acid which had not been converted into arsenate of potassium. Such results have not been observed when the arsenate of sodium solution was employed, and only in several cases where a large amount was injected at one time was a slight induration noticed. The value of the hypodermic use of this drug is readily appreciated when one stops to consider that it is at once taken up by the blood and carried to the tissues, without running the gauntlet of the liver when the toxic effects of the drug are largely focused.—*Med. Rev.*

Ectopic Gestation: Operation Late in Pregnancy.

Boissard describes two successful operations, classed as "abdominal," through the primary seat of gestation, tubal or otherwise, can hardly be proved late in pregnancy. The first patient was 29; the last period occurred on March 15, 1898. Abdominal section was performed on October 27th, as sudden pain and tension of the sac set in. The sac was incised, and a living fœtus extracted; the edges, which bled very freely, were sewn to the abdominal wound; they were so thin and soft that some of the placental tissue had to be included. The cavity was packed with iodoform gauze. A week later there was high temperature; the placenta began to putrefy, notwithstanding two irrigations of the sac daily. The fœtid odor disappeared, and the temperature fell immediately after irrigation with oxygenated water (10 volumes to 1 litre of 1.7 pint). But, there was much suppuration; an attempt to detach the placenta on the twenty-eighth day set up hæmorrhage, and renewed plugging was required. On the forty-fifth day the placenta came away. Seventy-seven days after operation a small fistulous tract remained. The second patient was 35, the last period occurred on January 19, 1898. Abdominal section was performed on November 7th. A macerated fœtus, weighing fou pounds, was extracted. The front of the sac was freely excised to allow of thorough plugging with iodoform gauze, and the edges were sewn to the abdominal wound. High temperature and fœtor followed, disappearing as in the other case when irrigation with oxygenated water was practiced. On the fifteenth day detachment of the placenta was attempted, but hæmorrhage was worse than even in the first case, and intravenous injection of serum was found necessary, as well as plugging of the sac. The placenta came away eleven days later. The sutures began to come away in the discharges, and the sac took long to close. Eighty-five days after the operation a fistulous tract still remained.—*Bull. de la Soc. d'Obstet. de Paris.*

Hysterectomy.

At a meeting of the Société de Chirurgie, M. Ricord spoke on abdominal hysterectomy for uterine cancer and said that he had performed that operation ten times with only one death. The gravity of the operation was, consequently, in his opinion, not so great as was believed. None of his patients could have been operated on through the vagina, as the disease had in each case destroyed the greater portion of that organ

The speaker acknowledged that abdominal hysterectomy was a tedious operation, especially where the ligaments were infiltrated, but it had the advantage over the vaginal method that it permitted ablation of the infected glands.

M. Segond said that he performed ninety-five times ablation of the uterus by the vaginal method with a total mortality of 14 per cent.; most of the unsuccessful cases were those in which the vagina and the broad ligaments were invaded by the disease. As to the ultimate result of the operations, out of forty cases of relapse of which he had knowledge himself, the disease returned in thirty cases within the first year, seven in the second, one in the third, and one at the end of the seventh year. Among the cases that might be considered cured, one has already survived ten years, another nine years. two four years, and two two years. He only practiced six times abdominal hysterectomy for uterine cancer. Surgeons, considering this method is superior to vaginal hysterectomy in the treatment of uterine cancer, believed that it was less grave than the latter; according to them it was the only rational operation, permitting the removal of all the ganglions, and they hoped that by-and-bye the prognosis would be much more favorable than that given by vaginal hysterectomy. As to the gravity of the intervention, it was certain that, thanks to the perfecting of the method of operating, abdominal hysterectomy was as a benign as vaginal hysterectomy, but it was none the less true that in cases where the extension of the lesions necessitated ligature of the iliac artery the operation could not be considered less grave than the vaginal method. Those who advocated the abdominal method gave for one of their principal reasons the facility with which the infected tissues could be removed, but that pretension was impossible to realize, but if some few glands were removed could the operator affirm that he left no tissue susceptible to be attacked by the disease? However, he admitted that for a cancer of the body of the uterus or for those forms complicated with softening of the neck, so that it did not afford a hold for the instruments, the abdominal method was the best. When the lesions were not limited to the uterus he never interfered, preferring palliative treatment, which eased the patient and prolonged her existence, frequently for a considerable period.—*Paris Cor. Med. Press and Circular.*

Anomalous Eruptions in Typhoid Fever.

J. M. DaCosta (*Amer. Jour. of the Med. Sciences*) reports several cases of typhoid fever presenting, during the course of the disease, eruptions similar to those of scarlet fever and measles. The scarlatina-like eruption is a uniform red rash, usually seen all over the body. It is easily influenced by pressure; it has its periods of greater or less intensity; it lasts generally a week or more; there is no desquamation; there is usually no sore throat or albuminuria; its presence does not seem to influence the temperature.

The eruption simulating measles is rarer and more misleading since the intercurrence of measles and typhoid fever is not uncommon. In typhoid fever the crescentic arrangement is absent as well as the itching, desquamation, coryza and catarrhal symptoms found in cases of true

measles. When there is an intercurrence of the two diseases, the onset of the measles is marked by the characteristic rise of temperature and other symptoms peculiar to the disease are present.

Dr. DaCosta also describes a general mottling of the skin which may precede or attend either of the above described eruptions. He believes them to be all expressions of the same pathological condition and due to vasomotor disturbance from disorder of the cutaneous nerves. They seem to have no effect on the prognosis of the disease.—*The Medical Standard.*

Intestinal Auto-Intoxication.

Mueller (*Centralbl f. inner Med.*) discussed in the Congress for Internal Medicine, the subject of auto-infection from the intestinal tract. According to the new auto-intoxication theories of disease, championed by Bouchard, Charrin and Albu, uremia, eclampsia, diabetic coma, gout and the conditions resulting from diseases of the typroid gland, suprarenal body, etc., are properly called auto-intoxications, since they result from a poison found in the body. Intestinal intoxications are of another class, since they are due to products formed in the contents of the stomach or intestines by saphrophrytic bacteria. They are rather to be classed with poisoning by meat or milk. Poisoning by meat takes one of three forms, either that of an acute gastro-enteritis, or a typhoidal form, or a form similar to poisoning with homatropine. This last form, called botulismus, is produced by diseased meat in which is to be found the bacillus botulicus. The second form is also due to the ingestion of the flesh of diseased animals. Similarly, milk poisoning may be due to the use of milk from diseased animals, or to the fact that the milk has spoiled. Many cases of auto-intoxication (ptomaine poisoning?) are improperly so-called. It is at least questionable whether putrefaction of albuminous substances in the intestine can produce symptoms of poisoning. The indol, phenol, skatol and sulphuretted hydrogen produced by the ordinary bacteria of the intestines, are comparatively harmless in their action, or perhaps it is more accurate to say that the body is accustomed to them and so has a degree of immunity. The subject is an interesting one, but needs a further investigation.

The opinion is now universal that it is not impossible to destroy bacteria in the intestines. In order to accomplish this a medicine would have to be very slowly soluble in the stomach, so that it might reach the intestines unchanged. The claims of the various manufacturers of intestinal antiseptics have no foundation outside of the minds of those who write the advertisements. Calomel acts probably as a laxative. The best treatment lies in the washing out of the stomach and the use of laxatives. A change os diet is also beneficial.

In the discussion of this paper, Stern said that he had disproved by experiment the possibility of intestinal antiseptics as secured by giving drugs, according to the claim set forth by Bouchard. Nevertheless, there is a certain amount of prevention of bacterial action to be obtained by the administration of antiseptics, notably of calomel. Calomel stools will sometimes contain so much of the drug that after standing several hours

there is a great diminution of the number of the bacteria in them, or there may, indeed, be destruction of all the bacteria contained in them. It is, therefore, going too far to say that the disinfection of the intestine is absolutely impossible.—*Med. News.*

New Diagnostic Spots of Measles on the Buccal and Labial Mucous Membranes.

HENRY KOPLIK, in the *Med. News*, says that every case of measles is accompanied by the development of peculiar spots upon the mucous membrane of the lips and cheeks. These consist of small, somewhat circular, spots, which become bluish-white toward the centre. Later the circular outlines disappear and the spots coalesce, leaving the mucous membrane of a somewhat darker color, studded over with these bluish-white spots. This appearance commonly shows itself from one to five days before the breaking out of the disease. With the appearance of the eruption this sign gradually disappears. It is claimed by the writer that the sign is of differential value in distinguishing other eruptive diseases, notably scarlet fever and German measles. The examination must always be made by daylight and with good illumination.—*Ex.*

Amputation of the Fallopian Tubes.

DR. GEORGE BEN JOHNSON says that the uterine tubes should be amputated in:

Extrauterine pregnancy, whether ruptured or unruptured, if the tube is much enlarged and altered.

In kinks and strictures, if these are numerous, decided and accompanied by dense adhesions, because having established by operation the previousness of the lumen under such conditions, it cannot by any means at our command be maintained, and may be followed by either hydro- of pyosalpinx.

In hydrosalpinx of either the follicular or flowing varieties, for the reason that the naked eye cannot define the limits of the former, and the latter will yield to no other treatment. In simple hydrosalpinx if the tube is greatly distended, its wall much thinned and in the presence of adhesions.

In pyosalpinx in every instance where the infection is other than gonorrheal, and in these if the abscess cavity is large and tube walls much impared. Indeed, attempt to save a suppurating tube is rarely justifiable.—*Richmond Jour. of Prac.*

Erythema Enematogenes.

At a meeting of the Clinical Society of London, Dr. F. G. Still read a paper on "Enema Rash in Children." (*The Lancet.*) The rash has a characteristic appearance and course, as was apparent from the study of twenty-six cases which occurred at the Hospital for Sick Children, Great Ormond street. Usually a bright red patchy erythema appeared, especially on the front of the knees, the backs of the elbows, the buttocks and the face; in some cases, however, the rash was scarlatinaform, or the two forms might be combined. It appeared most often from twelve to twenty-four hours after the enema, and lasted usually from twenty-four to forty-eight hours; there was rarely, if ever, constitutional disturbance; the

amount and time of retention of the enema and the duration of the preceding constipation did not seem to affect its occurrence. Scarlet fever, rotheln and measles were the exanthems for which an enema rash is most likely to be mistaken, the absence of constitutional symptoms, of sore throat, coryza and pyrexia serving to differentiate, in addition to the occurrence just after an enema and the atypical distribution of the rash.—*Albany Med. Annals.*

The Results in Administering the Antitoxine of Diphtheria as an Immunizing Agent.

A series of experiments were conducted in the children's hospital, Washington, D.C., by Dr. S. M. Adams to determine the value of the antitoxine of diphtheria as an immunizing agent, and he gives the following conclusions as the result of the observations:

First.—It is impossible to draw any definite conclusions as to the value of the immunizing dose of antitoxine. I am convinced, however, that the dosage was too small, and that if more units had been given better results would have been obtained.

Second.—The average duration of the immunity, as revealed by the observations, conforms with that obtained by other observers; we seem warranted in asserting that the larger the immunizing dose, the longer the duration of the immunity.

Third.—The immunizing dose of antitoxine has no injurious effect upon the kidneys.

Fourth.—Urticaria appeared in two cases, which was the only pathological effect observed.—*Archives of Pediatrics.*

Technique for Intracerebral Injections.

Albert Kocker recommends the following method of administering intracerebral injections. After shaving and cleansing the anterior half of the scalp, the point at which the injection is to be given is determined with the aid of a craniometer. The fluid is to be injected into the lateral ventricles, and in so doing the motor centres should be avoided. It has been found that a point two and a half to three centimetres from the bregma meets all indications. After cocainizing the scalp in this region a bone-drill is applied at the selected point, and a hole drilled through the scalp and cranium; upon withdrawal of the instrument the hypodermic syringe is inserted and the medicated fluid injected into the lateral ventricles. The method is so simple that it can be employed without any difficulty in practice outside the hospitals. The author cites a case of tetanus, in a 12-year-old boy, with whom he carried out the simple operation with great satisfaction, two intracerebral injections of tetanus antitoxin having been administered.—*Central. fur chirurgie.*

Constipation in Infants.

Constipation in infants is the practitioner's bugbear. He recognizes the inadvisability of the habitual administration of laxative drugs to the young, but is often driven to countenance their use by the paucity of the resources at his disposal. It is important to bear in mind that constipa-

tion in infants is due, in a large measure, to the element casein, which, if it is present in milk in larger quantities than normal, as compared with the fatty elements, tends to interfere with the due performance of the digestive functions. A child fed on normal casein, but with a low portion of fat, will probably be constipated. In breast-fed children it does not follow that the proportions of casein and fat are normal, for the maternal supply may be faulty in this respect. Disturbances of health, especially in the direction of indigestion on the part of the mother, will necessarily be reflected in the composition of the lacteal secretion, as can be demonstrated by analysis. The first step, therefore, must evidently be to regulate the habits and life of the mother. She must be placed on a diet of fresh meat, fresh vegetables, and freshly cooked fruit, with due provision for regular exercise and restriction in the matter of tea drinking and other dietetic irregularities. This *régime* will diminish the proteid and increase the fatty constituents of the milk, and will go far to rid the infant of the tendency to constipation. Should it fail, the best treatment for the child is the adminstration of cream in doses of from one to two teaspoonfuls in warm water from time to time just before the periodical meal.—*Medical Press and Circular.*

Enteric Fever.

Dr. William Cecil Bosanquet, in an article on "Notes on Two Hundred and Fifteen Cases of Enteric Fever" (Charing Cross Hospital) published in the *British Medical Journal*, refers to the treatment employed as follows: "As a rule, treatment was expectant and consisted of liquid diet, absolute rest, and attention to symptoms. The routine medicine was diluted hydrochloric acid, with syrup of orange and water. Excessive fever was treated by tepid, cold, or iced sponging. Ice-cradling was also employed with less visible benefit. In one case treated by raising the bedclothes on a cradle, the patient died of double pneumonia. Antipyretic drugs were not frequently used, with the exception of quinine, which appeared beneficial in some cases. Of antiseptics, turpentine was most frequently relied upon, and was taken well in most instances. The same cannot be said of naphthalene, which frequently caused sickness. In at least one case the pills in which it was contained were persistently passed in the motions unaltered. Antityphoid serum was used in a few cases without visible effect. In one of these cases a relapse subsequently occurred."—*Medical Record.*

Blennorrhoeas not Caused by the Gonococcus.

Axenfeld calls attention to the fact that while the majority of blennorrhœas are caused by the gonococcus, cases do not infrequently occur in the etiology of which other organisms are concerned—for example:

(1) Diplococci, which are morphologically indistinguishable from gonococci, and are frequently found, like them, within the cells, but which do not decolorise by Gram's method and grow like staphylococci on ordinary media at the temperature of the room. Attacks of blennorrhœas caused by these "pseudo-gonococci" are, as a rule, milder and shorter in duration than the ordinary form.

(2) Pneumococci. The diagnosis may be made by microscopic examination alone. The cornea in these cases is seldom affected, and recovery is rapid, sometimes by a sort of crisis. The incubation period in infants has not yet been determined, in adults it is about four days.

(3) The bacillus of Koch-Weekes may set up an acute conjunctivitis, but it is rarely met with. The small size of the bacilli which decolorises with Gram is characteristic.

(4) Axenfeld has seen two cases of conjunctivitis caused by the B. coli communis. The condition resembled that of a moderately severe gonococcal blennorrhœa, but in each case remained one-sided.

(5) He has also had one case (in a child 5 days old) of double diphtheritic affection of one cornea, which quickly improved after anti-toxin was injected. The cornea, it is to be noted, improved much less rapidly than the conjunctiva, a fact which may be explained by Coppez's observation that the cornea is not affected by the diphtheria bacillus directly, but by accompanying pyogenic organisms.

(6) The author has also seen two instances of well-marked blennorrhœa in which no bacteria were found at all. These he ascribes to chemical irritation.—*Deut. Med. Woch.*

Summer Diarrhoea in Infants.

As summer diarrhœa is so apt to be of a putrefactive nature, all agree upon the necessity of completely clearing out the gastro-intestinal tract as a necessary start in the treatment. In most cases when the physician is called, the sotols are loose and there may be vomiting. By at once stopping all milk, the stomach is soon emptied, and the principal indication is to clear out the bowel. If vomiting continues, draughts of tepid water may be administered, which, when rejected by the stomach, wash out that organ. I do not believe that it is often necessary to wash out the stomach with a tube. Sometimes when there is excessive irritation of the stomach, with much production of mucus, one washing out, however, will give relief. I usually employ tablet triturates of calomel, gr. $\frac{1}{10}$ every hour until six or eight have been administered. These small doses act as a sort of stimulant to the bowel, increase glandular activity, and usually effectively clear out the canal of its fermenting contents. The drug is also supposed to have some antifermentative effect. A good sized dose of castor oil is also effectual, and is followed by a sedative effect on the mucous membrane. The drug that I have found most useful in the summer diarrhœa of infants is the subnitrate of bismuth in large doses. As far as I have observed, the subcarbonate, salicylate, and subgallate of bismuth and beta-naphthol bismuth have no decided advantage over the subnitrate, which is everywhere procurable.—*Chapin, The Medical News.*

Ten Cases of Cerebro-Spinal Fever.

Doolittle (*Med. News*) reports ten cases of epidemic cerebro-spinal meningitis. Three of the patients were between eighteen and twenty-eight and seven between four and eleven. All were in previous good health. No two were of the same family though five cases occurred on the same street, within a distance of two blocks. Five cases were fatal,

a mortality of 50 per cent. The onset in nine cases was sudden, in one it was preceded by headache for two or three days. Vomiting and headache were present at the onset in every case. The pulse was rapid, the respirations increased and the temperature irregular in all. Vomiting, pain in the side, headache, photophobia, delirium and herpes labialis were present in every case. Spinal rigidity and cervical tenderness were rarely present before the third or fourth day. General hyperesthesia was noted in five cases and pain in the abdomen in four. Muscular twitching was generally present. No paralysis followed recovery. Pneumonia was a complication in four cases; all were fatal. Albumin was present in the urine in every case. Swelling of the joints was noted twice. No bacterial examination was made.—*Med. Stand.*

Lumbago and Sprained Back.

Dr. J. Schneck (Railway Surgeon) gives the following differential diagnosis between muscular rheumatism and sprained back:

MUSCULAR RHEUMATISM.

1. History of myalgia.
2. Patient underfed or overworked.
3. History of exposure.
4. Pain often confined to one side.
5. Pain and tenderness greatest in fibrous portion of muscles.
6. Often a history of malaria.
7. Usually no fever.
8. No shock or vomiting.
9. History of a sudden jar or sprain not necessary.

BACK SPRAIN.

1. Not necessary.
2. Usually the contrary.
3. Not necessary.
4. Usually both sides.
5. Greatest at tendons.
6. Not necessary.
7. Fever usually present.
8. Often present.
9. History of a sudden jar always present.—*The Medical Standard*

A Case of Bullet Wound and Traumatic Bone Necrosis.

Mr. Ora Rogers, Corona, N. Y., aged 29; American; bullet wound with necrosis of head of tibia; admitted September 6, 1897. Three years ago, while examining a revolver in a kneeling position, the weapon was discharged, and a 38-caliber slug entered below the knee joint, striking the head of the patella, breaking off a spicula of bone from the condyle and driving it into the head of tibia. These particulars of the effect of the shot transpired in the progress of the operation at this hospital; but the patient had insisted that the bullet had lodged in his knee, and from the pains so long experienced had been taught that it was located in the popliteal space. Care preliminary examination of the leg, however, gave

no evidence of the whereabouts of the bullet. It was, therefore, determined to make a thorough fluoroscopic examination of the entire limb, from hip to toe. Still not the slightest trace of a bullet could be detected. There was, however, a darker spot in the picture of the head of the tibia, which indicated an abnormality of some kind.

From the intense pain which the patient had for a long time been suffering, the stiffness of the limb, the general physical appearance and family history, I had suspected a tubercular osteomyelitis, and as his condition was plainly growing worse I had strongly advised immediate operation. After some days of deliberation he consented, and as soon as practicable was admitted at Sound View, as above stated, and examined by x-ray with the faint guiding indication already described. Two weeks were given to corrective and supporting regimen, with bovinine in milk or whiskey as the condition required; with phosphate of soda and sulphate of strychnine as required.

September 21st, after thorough sterilization of the leg and etherization of the patient, an incision was made six inches long, extending from two inches above the knee joint on the inner side down to about two and a half inches below the head of the tibia, and a careful dissection was made exposing finally the tibia head. After dissecting the periosteum aside, a small trephine was applied, and a button of bone was taken out of the head of the tibia. I now found that the head of the tibia was diseased throughout; having, as I had surmised, developed tubercular osteomyelitis. The entire head of the tibia was then cleaned out with a heavy bone curette, leaving it a mere shell. Fortunately this condition had not extended into the fibula, femur or patella, but was confined as yet to the head of tibia; neither had the joint been opened.

Just at this stage of the operation there was discovered a most remarkable circumstance; the course of the ball, after striking the head of the tibia, had been around the knee, and had actually made its exit at its point of entrance without being observed, and of course without being looked for outside of the wound, since there was no apparent aperture of exit, and the conviction of its three years' lodgment in the knee had naturally been invincible until now.

The cavity of the bone was at one cleansed out with the bovinine-peroxide reaction, and the product washed out and sterilized thoroughly with Thiersch solution, and then packed with iodoform-bovinine in sterilized gauze The wound was closed for half its length equally above and below; using four sutures, two above and two below the knee joint This packing was charged every twenty-four hours for one week, with daily cleansing and sterilization as before, when the bone cavity was found beginning to fill up with healthy material. But so much necrosed bone had been removed that I deemed it necessary, for a complete and rapid cure, to employ sponge grafts. From the finest quality of sponge, after being specially prepared, a small layer about the thickness of a finger nail was shaved off with a sharp scalpel, gently laid in the bone cavity, and fed with bovinine by a dropper, the wound being kept open. In five days of this continued treatment, the first sponge graft had been vitalized, healthy granulations having sprouted like little vines, ramify-

ing through the spores of the sponge. On the seventh day after the first another sponge graft was applied, and treated in the same way. This also became vitalized, and had pretty nearly filled up the bone cavity with new bone, within seven days, or on the third of October. Ten days later, a third sponge graft was applied, keeping up the bovinine peroxide and Thiersch sterilization and bovinine dropping from day to day. Ten days more sufficed for this last graft, as nourished by supplied blood, to become not only vitalized but converted to solid bone, like its predecessors, and to fill the cavity entirely. Periosteum was now dissected up and brought in opposition over the site of the late cavity, by means of continuous horse hair sutures. This united completely and firmly, fed with the blood-conserve, in five days. The edges of the external wound were then freshened and brought in opposition by strapping and two heavy catcut sutures, dressing with pure bovinine. The wound was entirely healed November 2d, but the patient was kept two weeks longer to watch for sequelæ, of which none appeared but those of perfect health and soundness.—*From Georgia Journal, Medical and Surgery, May '99.*

EXTRACT FROM "HOW TO SAVE THE PERINEUM."

By C. E. Fisher, M.D., Medical Century, Chicago.

There are three parts of the child which tear the maternal structures. Commonly it is considered sufficient for the obstetrician to protect the outlet from injury as the head passes out of the parturient canal. But this is not enough. And just here lies the greatest sin of omission of the lying-in chamber. The head is globular and distends the tissues symmetrically. If it is not allowed to press its way forward too swiftly—that is, if the abominable practice of bidding the woman to "bear down" as the perineum is reached is abandoned and the labor is retarded, as it should be at this moment—it ought never to lacerate the tissues If possible it should never be allowed to escape from the vagina during a pain. The woman should be enjoined to hold up, to go slow, to desist from effort and the perineum should be "gloved" back, as it were, over the head between pains. Times without number have I seen the tissues rip before my eyes or under the vision of my fingers while encouraging the patient to use all her force toward a quick expulsion, this having been the teaching in my student-days and the injunction of every practitioner with whom I have ever worked in the lying-in room. But since I have learned to pursue just the opposite course and insist that the patient shall leave the delivery of the head to me I rarely have even the slightest abrasion from this presenting part. Herein lies the safety of the perineum as the head glides over it. It should be delivered between pains, without the aid of the mother if possible, preferably when she is fully relaxed under an anesthetic.

But observation has taught me more than how to deliver the head without perineal injury. I have learned that the shoulder is the most dangerous part of the child and that the elbow comes next in order of frequency of menace to the maternal outlet. The common practice, to be

satisfied when the head is delivered and the perineum is felt to be intact, is a grevious error and accountable for many a case of vaginal and perineal shredding. The head is globular the shoulder angular. The acromion process projects at an acute angle from the trunk of the child and fairly digs down into the vaginal floor under the influence of strong pains. Posterior vaginal rips are almost always from this cause. Some authors place a good deal of stress upon which shoulder should be delivered first. It matters but little, in my judgment, which first sees daylight, but it matters much how much injury an unguarded shoulder may cause. After the head is born it is my practice to insinuate beneath it, on the floor of the vagina, two fingers of the managing hand, their dorsum being well anointed, and with these to protect that floor from harm. By spreading the fingers just a trifle the acromion process is allowed to rest between them and the pressing surface is thus made broader and flatter. This position is maintained until the shoulder shall have passed over the vaginal ostium, when the elbow is gone after and treated in like fashion. * * *

I condemn myself severely now whenever a vaginal perineal laceration occurs. And I go so far as to hold that except in the severest types of abnormal labor there is actually no justification for injuries to the maternal soft parts. Rushed labors, neglect to deliver the head between pains, and lack of specific attention to the delivery of the shoulder and elbow are the responsible factors and are all easy of elimination from the lying-in chamber.

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EDITORIAL.

A MEDICAL DEFENCE ASSOCIATION FOR ONTARIO.

The case reported by Dr. J. Moore Conerty, of Smith's Falls, in this number of the LANCET, again directs the attention of the profession to the necessity for the formation of an Association for Medical Defence in Ontario. In Great Britain and elsewhere the profession has organized for the protection of its interests, and at different times there has been considerable agitation among the doctors of this Province for a similar action, without as yet, any definite result. The attempts, particularly of ungrateful pauper patients, often instigated by that even more unscrupulous and despicable creature, the shyster lawyer, to prey upon the profession and to extort blackmail in cases of alleged malpractice, has of late become such a nuisance as to urgently demand an effective remedy for its suppression. The prevalent idea that a doctor will compromise for a small sum rather than suffer the loss of time and the annoyance, as well as the publicity attendant on the defence of a case, makes him a particularly favorite victim for extortion. Moreover, as the plaintiff is usually penniless, and the law does not require any guarantee for costs, the doctor, even when he wins the case, has to pay his own Solicitor's and Counsel's fees, without having any means of redress: it thus becomes much less expensive to compromise than to defend. Every case so compromised is but an incentive to further litigation, in which, regardless of the merits of the case, the doctor is the loser. It therefore becomes a matter in which the whole profession is interested, to see that every case is fought to a fair finish.

An Association for Medical Defence, with a small annual fee from each of its members, would furnish the means requisite for this purpose, without a great sacrifice on the part of the individual. Proper defence would go a long way to discourage this kind of litigation, by removing the motive which prompts the action in a large number of cases—the extortion of blackmail. Such an Association would not attempt to shield the unworthy, nor pay damages when justly awarded, but would seek to protect and assist in the defence of members subjected to unfair action.

We believe that some of our influential Medical organizations, as the Ontario Medical Association, should take the matter up, and by full discussion, obtain the opinions of the practitioners throughout the Province in reference to it.

Dr. Conerty, we are sure has the sympathy of the profession in the case now before the Courts. We are informed that his confrerès in the eastern end of the Province are making an effort to assist him in the defence of his case, and that the Divisional representatives of Nos. 15 and 16 have issued a circular asking for subscriptions to that end. We believe their action will meet with general approval, and a hearty response from his professional brethren throughout the Province.

A CASE OF COLLAR FRACTURE WHICH GAVE RISE TO A SUIT FOR MALPRACTICE AND PROLONGED LITIGATION

After a delay of somewhat more than two years, I desire to report the following case, not because of any new ideas in the line of treatment, but rather on account of a complication which led to unsatisfactory results, and further to show how a surgeon in the faithful performance of his work may be called on to defend himself in a most unjust action.

On the 11th of September, 1896, I was summoned to the home of Mr. A—— whose boy, a strumous lad of about ten years, had fallen from a beech-nut tree. On examination I found a fracture of the lower end of the radius (right arm) and a bruised condition of the Thearticular Eminence corresponding to a point marking the juncture of the middle with the inner third of the outer head of the Flexor Brevis pollicis muscle, also some scratches which had been bleeding, on the dorsal surface of the hand.

After administering an anæsthetic I washed the head and arm in a bichloride solution 1 to 2,000, and proceeded to reduce the fracture. The dressing used to retain the fragments in proper position was two lateral splints, well padded, measuring about two and one-half inches wide and extending from near the elbow to the meta-carpo phalengeal articulation.

A pad consisting of a roll of bandage one inch in diameter wrapped in absorbant cotton was placed in the palm of the hand, on which rested the distal end of the anterior splint and an antiseptic pledget of gauze was placed over the bruised area.

The splints were held in position (in the absence of adhesive plaster) by two "ties" of bandage placed one at the wrist and the other near the elbow. A bandage was then applied over the splints and the arm placed in a sling. Directions were given to keep the boy at rest and the hand elevated.

I saw the boy on September 13th and 17th, and found everything satisfactory. The boy did not complain. He was playing about two days after the accident. I did not see the boy again until October 4th. When I called at his home, on this date, I removed the splints and found the dressings and hand in a very dirty condition. So far as the bone was

concerned I found union good and with no deformity. After bathing the hand in tepid water I discovered an indurated patch of skin over the seat of bruise which was showing signs of separation from the healthy tissue. I considered it the remains of the bruised tissue which nature had not been able to take care of. It was superficial. Before going I dressed the hand antiseptically.

Three days after, on October 7th, I again called, and on examining the hand found signs of separation of patch more marked. I again dressed it as on previous day, gave instructions to have the boy brought to my office the next day to have his hand dressed.

He did not come as directed, and I afterwards concluded that his hand was all right. On Nov. 14, Mrs. A——, who was about to be confined, called to consult me regarding her condition. On leaving my office she mentioned that the "sore" on the boy's hand had not healed yet. I reminded her of my instructions, to bring the boy to my office to have the hand dressed, and told her to have the boy brought to my office at once.

On Nov. 16 Mrs. A—— brought the boy, and on removing a dirty rag which served as a bandage, I found a deep sloughing sore the size of a twenty five cent piece The indurated patch of skin referred to before was still hanging to the surface of the sore by some fibrous shreds.

The wound had become infected with pus-germs which had burrowed deeply, The thumb was held in an adducted and semi-flexed position in order to relieve any tensions on the ulcerating surface.

On inquiring why the boy had not been brought to me as I had directed, Mrs. A—— replied that "she thought the hand would heal all right. She had tried everything on it to heal it. Spoke of some salve she had obtained from a neighbor woman, the healing properties of which were unsurpassed," and concluded by saying that "she didn't know what kind of a young one he was, for if he got the slightest scratch it seemed never to heal."

On this occasion I got the sore cleaned up as well as possible, applied a proper dressing and instructed the boy to come to my office every day until his hand was all right. He came irregularly and it was almost the middle of December before the sore had completely healed.

As there was loss of integument and subadjacent tissues there was contraction in the process of healing which was much favored by the position in which the boy held his thumb—hence we had a slight deformity consisting of an abduction of the first metacarpal bone, causing the thumb to be drawn toward the median line of the hand to such an extent that it interfered with the complete flexture of the index finger.

Owing to the youth of the patient and being deterred from doing a plastic operation owing to the unsanitary and septic conditions existing in the boy's home, I determined to try "Massage," promising good results if I had the co-operation of the boy and his parents I encouraged the boy to come to my office every day for treatment and I explained to his parents how to rub and manipulate the boy's thumb in order to restore its position.

The boy came five times during the month of January. After this I did not see anything of him until the first of June, 1897, when he appeared accompanied by his father, who for six month's

been threatening to bring an action against me for malpractice, and boastfully claiming that he would get $5,000.00 if he did so.

On this occasion I charged the father and son with neglect, and pointed out to them where my directions had not been followed. I informed the father that I had not seen the boy for more than three months. The only excuse elicited from Mr. A——— for his negligence in not executing my orders was that he thought the treatment I was giving the boy was not doing any good. He further stated that he had consulted other doctors who said that "the hand would have to be split up."

I discouraged any operative procedure at this time and told Mr. A——— that I would not operate without giving "Massage" a fair trial; that "Massage" properly and persistently applied would, in my opinion, restore the functions of the thumb.

After again showing him how I wanted the hand treated, I requested Mr. A——— to so treat it for ten minutes every night and to advise the boy's mother to do likewise every forenoon. The boy was also to come to my office every afternoon at five o'clock. He came only four or five times when I again lost all trace of him and have not had an opportunity to do anything for him since.

In answer to inquiries as to home treatment the boy told me that his mother had not time to treat his hand and he was always in bed when his father came in at night, consequently there was no home treatment.

During his latter treatment I procured a plaster cast of another boy's hand and after padding it carefully would place the patient's hand in the cast with the thumb in an extended position. The hand was kept in the cast by a bandage, this I afterwards learned was taken off as soon as the boy would go home.

On the 5rd day of January, 1898, I received a letter from Mr. A's solicitors asking for damages for alleged malpractice, and threatening that unless they heard from me a writ would be issued within a week's time. The letter also stated that Mr. A. would consider any offer of settlement. There was no offer of settlement, consequently at the expiration of a week the promised writ was issued asking for $6,000 damages.

The case came down for trial at the Spring Assizes in Perth, but owing to the inability of the plaintiffs to secure medical testimony they asked for a postponement. We thought the case would end here, but during the summer the council for the plaintiffs secured the services of other medical men who were willing to aid the plaintiffs in their game for plunder.

Consequently at the Fall Assizes the case went to trial, and after a fight lasting two days we succeeded in getting a non-suit with judgment for costs.

The plaintiffs at once appealed to the Divisional Court asking for a new trial on the ground that "on the evidence the case should not have been taken from the jury."

After waiting almost a year the Divisional Court, I am sorry to say, gave judgment against me, ordering a new trial and saddling all the costs on me. Mr. B. B. Osler, my counsel, at once appealed from this judgment of the Divisional Court to the Court of Appeals, where the case now stands for argument. We expect a decision from the Court before the

end of the year as the case is on the list for argument during the present session and let us hope the decision may be favorable.

Notes—The contention of the plaintiffs is that the sore on the boy's arm was produced by a splint.

We know the cause—as stated previously, the fall causing devitalization of the tissues, and subsequently infection, and further, we declare that owing to the location of the sore it is impossible to produce such by means of a splint.

The deformity which is slight, is due to cicatrical contraction rather than to any peculiar art in bandaging as alleged by the plaintiffs. There would never have been any contraction had there not been neglect on the part of the plaintiffs (from Oct. 7 to Nov. 16) allowing the "sore" to become deeply infected by pus organisms, with consequent loss of tissue.

The plaintiff is a worthless fellow.

Judgment summons proof who at the time he began the action was under an order of commitment to jail for debt No matter therefore how successful we may be in defending we must pay the costs of defence.

Just a word about settlement. During the first days of the proceedings we offered (rather then spend money in litigation) to take the boy and place him in a hospital, public or private, and operate on his hand, or otherwise treat it in order to restore its usefulness provided we could have absolute control of him while under treatment. They would not accept this unless we gave them a guarantee. We, of course, could not guarantee anything.

I presume at this time $200 would have settled the case but I considered that such a course would not only be unjust to the profession, but particularly so to myself.

While it would have been much better for me financially to have settled, yet in doing so, I would only be encouraging a class of unprincipled and irresponsible fellows, who are after plunder rather than our earnest efforts on their behalf.

It is true, and I have experienced the force of it, that when confronted by all the annoyance of protracted litigation, the enormous expense, which many of us can so ill afford, besides the injury to our professional standing, etc., the first suggestion which is apt to come is to get the matter settled as quickly and consequently with as little publicity as possible. And we ask the question, would it not be better to pay something at once and get out of the difficulty? My answer is No! A thousand times No! so long as we feel that we have done our duty and are therefore morally irresponsible.

It is the duty and ought to be the desire of each member of the profession to suppress by every possible means all such actions which are so frought with injustice, not only to the individual, but also to the profession as a whole

Just so soon as a certain class of the public and those who advocate their claims in Court, understand that we do not listen to their "bluff. That they in order to possibly gain anything must fight every inch of the ground against a united profession, then and not till then will the members of our profession be relieved largely, if not entirely, of a most painful annoyance as well as to many of us a severe financial loss.

Sincerely yours,

Smith's Falls, December 1, 1899. J. M. CONERTY.

THE TREATMENT OF HEADACHES.

BY ALEXANDER HAIG, M. D., F. R. C. P.,

Physician, Metropolitan Hospital.

Pain in the head as elsewhere is very commonly due to pressure, and headaches may be conveniently divided into:

1. Temporary.
2. Chronic.
3. Paroxysmal or recurrent.

Temporary headache may be due to any accidental cause, as an injury or a fever which causes for a time an alteration of pressure inside the skull or membranes; but as these pass away so does the headache, and it rarely requires more treatment than an icebag for a few hours.

Chronic headache is one which lasts with little change hour after hour, day after day, even week after week, or month after month. It may be said to be chiefly due to two causes:

1. New growth on the skull or membranes or within them.

2. Neuralgia, often only another name for inflamation and pressure about the teeth, or the structures that surround them.

The treatment of (1) is a matter of surgery and the pain and pressure are relieved by opening the skull and membranes, or in the case of specific new growths by iodides which cause their absorption

(2) Requires attention to the teeth, with or without quinine, and purges which lower blood pressure.

The paroxysmal headache tends to return after more or less definite intervals either of weeks or months, for years, often for the greater part of the lifetime of those who suffer from it; but a given attack rarely lasts more than 48 hours. It is therefore at once distinguished from other forms of headache by history, or in the absence of history in that it lasts less than 48 hours.

It has also special characters which serve to distinguish it, namely, it is accompanied by a small hourly excretion of urinary water and a large excretion of uric acid, both relatively and absolutely; the pulse-rate during the headache is slow (often below 60) and the blood pressure high.

It commonly occurs in individuals whose blood pressure is too high, and there is a marked rise of this pressure at the time of the attack.

The capillary circulation in the skin is slow during the attack, and quickens as it passes off, and similarly the defective capillary circulation in the kidney is the cause of the scanty urine which accompanies the attack, and the improved circulation is shown by the diuresis which follows it.

The paroxysmal headache is thus shown (and the demonstration can be made absolute both by producing and removing it at pleasure) to be due to paroxysmal fluctuations in the excretion of uric acid.

It is prevented with absolute certainty by diminishing the uric acid in the body, and preventing large fluctuations in excretion.

It can be produced by swallowing definite quantities either of uric acid or bodies of the alloxur or xanthin group, and all of these produce at the time of the headache a large excretion of uric acid in the urine, excess of granules in the blood, a slowing of capillary circulation, and a rise of blood pressure.

The explanation of this paroxysmal or uric acid headache is thus absolutely complete, and this is demonstrated by absolute power of control.

We find, also, that the uric acid headache is but one instance of a general law, that uric acid is the cause of high blood pressure not in this case only but in all conditions, and throughout life, and that it is thus the cause of a very large number of what have hitherto been considered as different diseases, though practically the whole of these are really represented in epitome, as it were, in the symptoms of the uric acid headache itself.

We now know that the central factor in this group of symptoms is the uric acid in the blood, and it is in excess in the blood at the time when it is passing in excess in the urine.

Excess of uric acid in the blood obstructs the capillaries all over the body, and causes the slow capillary reflux, which can be easily measured. Obstructed capillary circulation with a strong heart means high blood pressure between the opposing forces, and the headache is the effect of pressure inside the skull membranes produced by the high blood pressure, so that it has an identical causation with other and more chronic forms of headache; all are due to pressure—they differ merely in the cause of the pressure.

With one or two insignificant exceptions uric acid is the cause of all high blood pressure; and as I am pointing out in a paper also before this meeting, the diurnal fluctuations of blood pressure which occur in everyone are but the results of the normal diurnal fluctuations in the excretion of uric acid and its passage through the blood on the way to be excreted. As these fluctuations in the excretion of uric acid are the results of well understood causes, which are completely under our control, the resultant fluctuations of blood pressure can be made to take any direction or time relation at pleasure. Thus the head pain of this headache is but the representative—and often the forerunner—of the more severe pain and coma of uræmia, and the high blood pressure bears a similar relation to both.

The fits which in some sufferers replace or supervene upon the headache bear a similar relation to the fits of uræmia, and the fits of epilepsy are often, as I have shown, related to a similar fluctuation in the excretion of uric acid, and have a similar causation.

The defective capillary circulation passes through all gradations such as are met with in diabetes and Bright's disease, where the blood pressure is again high, up to the local gangrene of Raynaud's disease.

Mental depression and melancholia, so well known to be associated with high blood pressure, are again represented in the low spirits and general mental obfuscation which surrounded the headache.

The fall in the excretion of urea which accompanies the onset of the headache is, again, but the epitome of the more marked fall accompanying the onset of Bright's disease; and the rise which follows the headache is also represented in the rise which accompanies the cure of the Bright's disease when possible. And the fall in the blood decimal (or worth) which accompanies the headache is, again, the epitome of the more severe and extensive anæmia which follows the still more severe collæmia of chlorosis, rheumatism, or Bright's disease, all these latter conditions being associated with increase of headaches in those who suffer.

The whole of these conditions, when due to uric acid and when they have not through neglect become organic, from atrophy of important tissues (which defective capillary circulation at length brings about), are amenable to the control of the uric acid in the same way that the underlying conditions, capillary circulation, and blood pressure are so.

The treatment of the paroxysmal uric acid headache is the clearing of all available uric acid from the body and blood, and this is accomplished by:

(1) Avoiding food or drinks which contain uric acid or xanthin.

(2) Not taking more nitrogenous food than physiology requires.

(3) Clearing out stores of uric acid already in the body from neglect of (1) and (2).

(1) Means the avoidance of all animal foods except milk and cheese, and of certain vegetables substances rich in alkaloids (as tea, coffee, etc.)

(2) Means taking enough albumen to produce from 3 to 3.5 grains of urea for each pound of body weight per day, but not more.

(3) Is generally sufficiently provided for by the change of diet, but occasionally it is necessary to give a course of courses of salicylates to aid elimination.

Anyone thus completely altering his diet may expect a distinct diminution both of the frequency and severity of the headaches in a few weeks, and that they will be reduced to one-tenth or one-twelfth of former numbers in twelve to eighteen months, which, with a correspondingly large decrease in severity, amounts practically to cure; but let him again take uric acid in any form and they will quickly return.

With improvement in the headache will go improvement in the blood decimal or "worth" quickening of capillary circulation and fall of blood pressure throughout the body; and any accurate measurement of the condition of the blood and its circulation is a perfectly reliable index of the effects of the treatment. B. M. J.

THE THERAPEUTICS OF LIGHT AND HEAT.

BY W. KNOWSLEY SIBLEY, M.A., M.D., M.R.C.P.

Senior Assistant Physician to the North West London Hospital.

In this brief communication I purpose to epitomise the results of several years' work on the treatment of numerous diseases by the local application of dry hot air. Since the publication of my articles on the subject a few years ago I have continued the investigations both in hospital and private practice, and as time has gone on I have become more and more convinced of the great advance in therapeutics which this form of treatment has brought about. The youngest patient treated was a child just three years old, a boy, suffering from epilepsy, and the oldest a woman of 93, afflicted with chronic rheumatism, especially in the hands, accompanied by a considerable amount of pain. Both these patients were treated as out-patients, and did well

More diseased conditions than might at first sight be imagined are benefited by local hot-air treatment. My rule at the hospital for some years has been, when a patient suffering from any complaint does not improve after a few week's routine drug treatment, to order the hot-air treatment, and I must say that in the majority of cases improvement very quickly shows itself, often to a marked degree.

The cases for which this treatment is especially indicated are all forms of *arthritis*, whether of rheumatic, gouty, neurotic, tuberculous, or traumatic origin, particularly when the process is chronic. I can say with confidence that almost every kind of joint mischief, whether the result of injury or disease, is greatly benefited by local hot-air treatment. Under joint diseases the following would be included, gout (acute, subacute and chronic), rheumatism (acute, subacute and chronic), gonorrheal rheumatism, rheumatoid arthritis, scrofulous disease of joints (for example, morbus coxæ), synovitis, bursitis, periostitis, including syphilitic and all forms of adhesions.

With regard to *injuries* (recent and old-standing) synovitis bursitis and all degrees of stiffness, adhesions, and various conditions of immobity a few words, are desirable. Many of these cases are greatly improved simply by the local application of heat, but, of course, if severe or old-standing, surgical interference by breaking down adhesions greatly increases and accelerates the cure. It is in most cases better to give a course of local treatment before any attempt is made to break down adhesions. Then an anæsthetic may be administered and the adhesions broken down and joints freely moved and placed immediately afterwards in a hot air apparatus. This frequently prevents the subsequent effusion and greatly diminishes the pain; in fact, I have notes of several cases of severe old-standing adhesions treated in this way with little or no pain or even effusion following the operation and with very satisfactory results.

Hysterical joints I have found to be amenable to this treatment:

One case occurred in a women, aged 23, who when admitted into the hospital had been unable to walk for two years owing to contraction of the left knee joint; she had had some stiffness of this joint for five years. After two months' treatment she left the hospital able to walk.

So again, cases of either local or general *matnutrition*, especially cases of feeble circulation, due to local causes such as injuries to blood vessels or nerves, chilblains, cold extremeties, and deformities due to arrested nutrition usually improve, as do most forms of localised œdema

Most forms of *neuritis*, both gouty and those of a more directly nervous nature (such as peripheral neuritis and traumatic neuritis) do remarkably well; and also sciatica, lumbago, and allied affections, including neuralgia following herpes zoster, are usually cured.

I have had most satisfactory results in a large number of cases of *chorea*. The movements of the limb under treatment rapidly subside while under the influence of the heat, usually returning with less severity shortly afterwards.

One of the worst cases of chorea I have seen occurred in a boy, aged thirteen, who was carried into the hospital quite unable to stand; the head was thrown back, his tongue was protruding from his mouth, and was almost bitten in half with the movement of his teeth; there were incessant involuntary movements of almost the whole muscular system, and the respiration was greatly embarrassed. especially the act of expiration. He would take several short rapid inspirations, and then with a great effort a long expiratory one; he was almost unable to swallow, great choking being produced on any attempt at deglutition. The pupils were widely dilated, the face pale, and the child was more or less unconscious, with high fever. The day after admission the condition became worse, and acute rheumatism set in in his knees and ankles. Within a few hours there was both endocarditis and pericarditis. Medicinal treatment seemed to have no effect, and the child appeared to be dying. As a last resource, dry hot-air baths were ordered. After the first the condition rapidly improved, and the patient left the hospital cured about three weeks later.

His temperature when placed in the first bath was 101°. In the bath it went up to 102°, and an hour after it was 100.6°.

Epilepsy appears often much benefited by treatment, in many cases combined with bromide taken internally. Some cases, however, have greatly improved both as to the duration and frequency of the fits with hot-air treatment alone.

Some forms of *paralysis*, especially lead palsy and paralysis due to injuries to the nerve trunks, do well under the treatment.

Cases of old-standing paralysis due to central lesions do not improve to the same extent, but these, especially those associated with coldness of the paralysed limb, are in time benefited, more particularly with respect to the nutrition and warmth of the part.

Ménière's disease was in 3 cases greatly relieved.

Chronic *bronchitis* (especially cases associated with Bright's disease and high tension) was greatly relieved, as were also cases of asthma and diabetes.

I have found the cough greatly relieved in some cases of phthisis, even during the active stage of the disease, and patients have gained weight and expressed themselves as improved.

A good deal might be said of the effect of the dry hot air on the *heart*; in fact, it would appear that what has been written on the Schott or Nauheim treatment might very well be applied to this. As probably the therapeutic effect of the saline effervescent baths is one primarily of gentle stimulation to the cutaneous nerves, so here again the application of dry heat is an excellent stimulus to cutaneous nerves and blood vessels, and many cases of chronic heart disease undoubtedly do very well; indeed, my experience teaches me that cases need rarely, if ever, be refused on account of heart mischief.

Many of the dry forms of *skin disease*, such as psoriasis and dry eczema, do very well, so also in cases of sclerodermia (where the patient has never been known to perspire from the affected regions) the skin becomes accustomed to sweat after persevering with the dry hot air.

Chronic ulcers and local inflammatory conditions, such as boils, are cured, as are cases of erythema nodosum.

It is frequently asked if we should administer the treatment to women during menstruation. The general effect of the heat is to increase the catamenia, and therefore in cases in which this is excessive it would not be desirable. I find that, speaking generally, cases of scanty, and especially of painful, menstruation are benefited by the application of heat to the pelvic regions.

Amenorrhœa, especially in young anæmic girls, is an especial indication for treatment at about the time the period is due.

It has recently been pointed out that many of the chronic backaches and pelvic pains of women are probably due to rheumatic changes in the pelvic and uterine ligaments and appendages. These are greatly relieved, and often cured, as might be expected by this form of treatment.

I must now allude to some cases which were not improved by the treatment.

Well-defined Locomotor Ataxy.—A few cases I have treated did not appear to be altered so far as the lightning pains or the ataxic gait were concerned.

Cases of Paralysis Agitans.—Although there was improvement in the general condition of the patient, and increased strength in the limbs treated, there was no apparent diminution in the movements, either during the process of exposure to heat, or as the result of treatment.

To *writer's cramp* the same remarks apply.

The question of the desirability of treating acute cases of gouty or rheumatic arthritis is a most important one, and I still feel unable to formulate definite opinions upon it. The doubt would seem to be particularly strong while pyrexia, considerable pain, and recent infiltration of the tissues in and around joints are present. The more localised the condition, with these symptoms, the more should I hesitate to predict the result of the first few baths.

The immediate result of the treatment in these cases is sometimes to disseminate the inflammatory process and convert what was at first a local arthritis into a general one, with the consequence that patient and

doctor became alarmed and the treatment is stopped. If treatment be persevered with, and often if in the first instance heat was only applied to one limb, then a whole bath is administered when the condition has become general, the disease rapidly subsides; but the possibility of such an exacerbation of symptoms must be borne in mind from the commencement.

A similar result is commonly met with in acute gout with great tumefaction and excruciating pain in one joint. It the heat process be applied to this joint it will soon relieve the symptoms, swelling will subside, and pain disappear. Probably, however, the same condition (even sometimes more acute) will appear within a few hours or during the next day in the corresponding part of the opposite limb. This of course frequently happens in cases of acute gout when treated by drugs, but the likelihood of its occurence after the heat bath must not be overlooked.

I now propose to mention some facts in connection with the addition of luminous rays to non-luminous radiant heat.

At the present time I am especially interested in experiments with an attempt to determine which of the light rays have the most penetrating therapeutic effect.

It is known, for instance, that the violet end of the spectrum contains the rays which produce sunburn (Bowles). By the simple means of intervening pieces of coloured glass in the light rays it is possible to cut off whatever rays are desired and to only permit rays of one or more colour to be thrown on the part under treatment. Thus with a red glass screen all the violet, which are the irritating burning rays, are shut off and a very comfortable soothing red heat is produced. At the same time the temperature is but very slightly effected.

Very little at present is known about the effect of the various light rays on the animal organism, but a great many experiments on this subject have been made on plants, and the results in this connection are certainly worth noting.

The hæmoglobin of the animal cell has been compared to, and has many fuuctional similarities with, the chlorophyll of the vegetable cell.

The necessity of the human body for light and air is of universal recognition People become anæmic when deprived of sunlight; and so also the entire life of a plant depends upon the action of the light on the cells which contain chlorophyll.

The following facts may be of interest in connection with this subject:

A.—General. 1. Action of Rays of Different Refrangibility.

The rays of different refrangibility which together constitute sunlight, and appear as variously coloured bands in the spectrum, vary in their physiological action on the processes of plant life.

Chemical changes, so far as they are in the main dependent on light, are produced chiefly or solely by rays of medium or low refrangibility (namely the red, orange, yellow or green). This is the case for instance with the production of the green colour of chlorophyll, the decomposition of carbon dioxide, and the formation ot chlorophyll, starch or sugar.

On the other hand, the rays of high refrangibility (the blue or violet as well as the invisible ultra-violet rays) are the principal or the only ones which produce mechanical changes, so far as these are dependent on light. It is these rays which influence the rapidity of growth, alter the movements of the protoplasm, compel swarm spores to adopt a definite direction their motion, and change the tension of the tissues of the mobile organs of many leaves, hence causing movements.

2. Action of Light of Different Intensities.

That the action of light on plants varies with its intensity, as does temperature with its elevation, admits of no doubt, and is obvious in all physiological observations.

3. Penetration of the Rays of Light into the Plant.

The rays of greatest refrangibility are in general almost entirely absorbed by the superficial layers of tissues, while the red light penetrates most deeply.

B.—Special.—(1) Chemical Action of Light on Plants. (a) Formation of Chlorophyll.

All the visible parts of the solar spectrum have the power of turning the etiolated chlorophyll granules green, but the yellow rays and those nearest them on each side are the most powerful, and this is also the case with the exhalation of oxygen from cells containing chlorophyll.

(b) The Decomposition of Carbon Dioxide.

The influence of light upon the evolution of oxygen is greater the more carbonic acid is contained in the air; only those rays which are visible have the power of decomposing carbonic dioxide, and those which appear brightest to the eye (the yellow rays) are alone efficacious in this process as all the others put together.

(c) The Formation of Starch in Chlorophyll Granules.

The formation of starch is a function of chlorophyll granules exposed to light, its absorption a function of chlorophyll granules not exposed to light. The formation of starch in chlorophyll granules depends on conditions which favour assimilation; and the principal feature of the process, the evolution of oxygen, proceeds vigorously in light consisting of red, orange, yellow, and to a certain extent of green rays; while the more strongly refrangible half of the spectrum, consisting of green, blue, violet and ultra-violet rays, has only a very slight effect.

(2) Mechanical Action of Light on Plants.

(d) Without discussing the question, it may be briefly said that the influence of light on the movements of protoplasm varies according to the nature of the motion.

(e) Cell Division and Growth.

Light retards growth; but it is only the rays of high refrangibility, the blue, violet, and ultra-violet, which act in this way.

(f) **Action of Light on the Tension of the Tissue of the Organs of Leaves endowed with Motion.**

It is only the more refrangible rays that produce a paratonic effect, while the red rays are inert.

These few remarks on the actions of the various light rays upon plant life would seem to open up a wide field for experiment and observation with regard to the treatment of diseases by different light rays in addition to heat rays. It is probable that as we learn more of the pathology of those condition we are accustomed to treat we shall be able to decide beforehand what particular coloured rays would be most serviceable to the treatment of any given disease. Apart from some general principle if we desire a treatment which shall not tend to produce burning of the skin, but one which will pentrate into the tissues, we shall use the red rays, and *vice versâ*. As a matter of experience, I have found the heat produced by red rays far more soothing and less irritating in its effect than using the whole of the rays of the visible spectrum together.

With regard to the general effect of the luminous rays there is no doubt that the addition of luminous rays to ordinary non-luminous radiant heat produces an increased diaphoresis. Patients who do not sweat with non-luminous heat very quickly do so when some light rays are added, and this is often noticeable even at a lower temperature than had been previously tried.—B. M. J.

TORONTO MEDICAL SOCIETY.

Stated meeting November 16th, 1899. Dr. Gilbert Gordon, M.D., Pres., in the chair.

Dr. Rotch of Boston, gave the address of the evening on "Infant feeding." He asked the pardon of his hearers for beginning in an elementary way, but the subject was one which concerned elements more than anything else if scientifically studied. He had been struck by the unscientific methods of feeding, by the turning over the babe to ignorant nurses to feed and the use by these women of patent or proprietory foods, with a result that the worst and cheapest were used. Again, while medicine, surgery and other branches had made in late years rapid advances, this branch, dealing with the beginning of life and the foundation of healthy citizens, had been neglected.

Throughout the world for ages nature had provided a food causing the least mortality, and which was the best. The breast milk of the average quality was the best for the average infant. And so long as the infant did well on it there was no need to change. The elements of a good human milk were fats, sugar and proteids, in the following proportion :

Fats, 4 per cent.
Sugar, 7 per cent.
Proteids, 1-2 per cent.

Of these, sugar was the least varying and was always milk sugar, which differed materially from cane sugar. It was supposed, he said, to produce the bacillus lactis alrogens which antagonized the flora of all bacteria and rendered the infants alimentary coval sterili. It was known that changes

in the temperament of the mother produced changes in her milk, these changes were found to be due to an increase of products, causing vomiting and gastric disturbances. This, if not largely increased, could often be reduced by actual exercise, such as horseback riding, on the mothers part. Increases of fat or decrease from the usual standard could often be regulated by diet. It had been found that a large number of healthy babies did well on a breast milk containing fats, 3 per cent.; sugar 6 per cent., proteids 0.50 per cent. He concluded, therefore, that the breast milk must have certain percentages of elements for certain infants, that in fact each infant had its idiocyncrasy, that what one infant did well on another would starve.

He compared milk to a dinner of courses. Some partakers deriving the nourishment from the fish, others from the cereals, others from meats, etc. Few could receive the entire meal. So infants could not take the whole constituents of milk, but the proportion of elements must be modified to suit the individual.

The variety in percentages of breast milk were very numerous and interesting. In increase of fats alone, 4 per cent. would produce most likely diarrhœa, while if under 2 per cent. the milk would not nourish. The proteids might drop as low as 0.50 per cent. and still the infant thrive. There were, therefore, limits which determined good breast milk.

Milk, therefore, should not be considered as such, but as a full meal of three courses or elements, permitting a large variety of combinations, not only from different mothers, but from the same mother. When a baby was not doing well at the breast the milk should be analysed at a laboratory, and if after an attempt to regulate the percentages to suit the child it was not found possible, it should be artificially fed.

The profession was, he said, very far behind in the scientific manufacture of artificial food for infants. Proprietary foods, he said, were carefully prepared no doubt, but how could they be modified to suit each case when a proper understanding of the elements of milk had been gained? The same held good with the so-called "Cream Mixtures," these contained cream, milk, water, etc, for a certain aged child. Such combinations showed an ignorance of the elements dealt with. If, for instance, an increase of fat were requisite, the directions said add more cream. But he held cream was no more a definite quantity than is milk; therefore, by increasing the cream an increase was also made in proteids, thus upsetting the whole calculation.

For these reasons it was necessary for the physician who endeavored to give a formula based upon a scientific use of the elements to have it filled away from the home, else the mother in her anxiety for her babe may, fearing starvation at the small quantity of milk, add more, thus upsetting the calculations.

It was quite unnecessary he showed to have predigested food. By giving a lower per cent. of proteid and gradually increasing it the same result was obtained in a far better way. That was by exercising the digestive functions without over-taxing them and thus increasing their activity.

The laboratory was the only place, he claimed, where the mixtures could be scientifically prepared, just as a prescription was filled best by a chemist.

The attendant physician ordered a certain per centage of elements, and the mathematician at the laboratory calculated the amounts and the food was prepared. This could not be done at home because the mathematical work was beyond most physicians' time or perhaps ability. He could not calculate the quantities himself, he said, and also because of the difficulty of analyzing the supply of cream and milk. Of the use of cereals to break up the curd of the milk he did not approve.

He had not proved that they did so, and the danger of the use of the cereals was the consequent increase of sugar.

The difference in the proteids of human and cows milk was due to the difference in proportion of coagulable and non-coagulable albumen. A child taking 2 per cent proteids from its mother would not take the same per cent. in cow's milk. Because the mother's proteid contained a much larger per cent. of non-coagulable albumen.

Two per cent. proteid in breast milk should be replaced by about 1 per cent in cow's milk. He had found, he said, that a lower per centage of cow's milk proteid would produce the same result as a higher per cent. of breast milk. Probably the former was more nutritive. Always, therefore, begin with a low proteid. He advised, when weaning a baby, to begin with a formula such as—

Fat, 4 per cent.
Sugar, 7 per cent.
Proteid, 1 per cent.

Later on changing to

Fat, 4 per cent.
Sugar, 6 per cent.
Proteid, 2 per cent.

And so on until—

Fat, 4 per cent.
Sugar, 4 per cent.
Proteid, 5.40 per cent.

was reached which represented cow's milk.

Discussion—

Dr. Oldright asked if there were any difference between Jersey cow's milk and other breeds.

Dr. Galloway asked as to the effect upon the infant from a diet of sterilized milk.

Dr. McMahon asked about the cost per diem of feeding by the laboratory preparations.

Drs. Machill, McKee, Oakley, Nevitt, Graham, Chambers, Webster and McPhedran also spoke.

In reply Dr. Rotch said the fats of Jersey milk were not as good as of the Hurdier breeds, as Holsteins, &c. Otherwise there was no difference. He had not seen scurvy follow the use of sterilized food. If food had to be heated any lime water should always be added after this had been done. The expense was about 50 cents a day or 12 cents a qt. for milk.

BOOK REVIEW.

PRACTICAL DIAGNOSIS: THE USE OF SYMPTOMS IN THE DIAGNOSIS OF DISEASE.[1]

Fourth Edition, revised and enlarged by Hobart Amory Hare, M.D., B. Sc. Lea Bros. & Co.

The fact that a fourth edition of this work has been called for within four years is, in itself, a high tribute to its excellence, and shows that it supplies a want acceptably. Practical Diagnosis has advanced so rapidly in the past few years, owing to the introduction of improved scientific methods, and the literature on it is scattered through so many voluminous works dealing with different subjects, that a treatise dealing with the subject in a concise form will be found not only convenient, but a necessary addition to a medical library.

The author has divided his book into two sections—part I, consisting of 13 chapters, dealing with the manifestations of disease in the various organs, and part II, of nine chapters, dealing with the manifestations of disease by symptoms.

The text is accurate and up-to-date, the plates are many and well chosen, and the presswork excellent.

Lea's Series of Pocket Text-Books.

Tuttle's Disease of Children. A Manual for Students and Practitioners By George M. Tuttle, M.D., Attending Physician to St. Luke's Hospital, Martha Parsons' Hospital for Children, Bethesda Founding Asylum, etc., St. Louis, Mo. In one very handsome 12mo. volume of 374 pages, with 5 colored plates. Cloth, $1.50, net. Lea Brothers & Co., Philadelphia and New York.

The author, whose extensive experience in both teaching and practice has peculiarly fitted him for the task, has prepared a work which must prove of great value to teacher, student and practitioner alike. In logical and natural order he has stated concisely and in interesting form the whole story of the present status of this important branch of medicine.

The *physiology of infancy*, as the basis of this department of medical science, is thoroughly covered; *artificial feeding and development* receive careful attention, and the entire book is practical and trustworthy. Anticipating an unusually wide usage the publishers have issued the book at a price which will be of obvious advantage especially to students, while at the same time it is mechanically and typographically as nearly perfect as possible.

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A CASE OF INTERSTITIAL EMPHYSEMA.

HORACE C. WRINCH, M.D.C.M.,

House Surgeon St. Michael's Hospital, Toronto.

A few months ago I had the opportunity of making observations on a case of subcutaneous emphysema and finding that it is sufficiently rare to be of general interest, I have taken the liberty of submitting an outline of the case.

The patient was a well developed male child of six and a half months. From birth he grew rapidly until three months old, although a slight cough had developed by that time. The cough persisted and was treated with mild expectorants. His growth then was observed to be less rapid than before. When questioned, the parents gave a history absolutely free from tubercular taint, so that that disease was not given the consideration it should have had as an etiological factor. Subsequently the father was found to be phthisical, the specific germs being found in abundance in his sputum.

The emphysema was noticed first one evening when the child was being prepared for bed. It appeared as a soft swelling above the clavicle on the right side of the neck. The child had been more uneasy during the day but had not been noticed to have any severe attacks of coughing that day. Next morning the swelling had extended considerably. The skin of the neck was distended all round except over the surface of the trapesius muscles. The inflation had not extended on to the face but had followed up the space between the ramus of the jaw and the ear on the left side and was beneath the scalp nearly to the middle line. Downwards, it extended over the chest about as far as the lower attachment of the great pectorals. It extended out on to the shoulders and into the anterior fold of axillæ but not posterior to these points.

On the third day the inflation had extended farther beneath the scalp and down the chest.

On the fourth day it had reached the scrotum and distended it to the size of an orange, having followed downwards on the left side anteriorly and passing over Poupart's ligament at the internal ring. Some inflation had also reached the dorsal surface of the body from the left side.

On the fifth day there was very little change in the condition. Death occurred on the morning of the sixth day from the time the swelling was first noticed.

Other symptons noticed during the progress of the attack were, a rapid pulse, distress on coughing, breathing labored and jerky at times, becoming rapid towards the end; temperature slightly above normal. During the last three days there was marked retraction of the subcostal region during each inspiration. There was also some dilation of the capillaries over the most distended areas, but on the whole the nutrition of the skin was not much impaired.

A post mortem examination was made five hours after death. The following extracts from the notes will give an idea of the condition found present:

"Parts of subcutaneous tissue distended as described above and as shown in photos taken at time of making autopsy. A good deal of emaciation where the skin was not distended.

"On making incision, subcutaneous tissues of chest were dry and almost bloodless. Air could be squeezed out at edges.

"On opening thorax, a condition of pneumothorax on left side, the air rushing out as soon as the left pleural cavity was perforated, the lung being found collapsed and lying at posterior part of the cavity. Weight of lung $2\frac{3}{4}$ ounces. There was no effusion or adhesion. The lung showed a number of large and small emphysematous bullæ beneath the pleura. This condition could be traced from the root of the lung up into the neck, suggesting the probable source of the air in the subcutaneous tissues. In the right pleural cavity there was no air or fluid, but the lung was firmly adherent to the parietes over the upper and middle lobes. Weight of lung $8\frac{1}{2}$ ounces.

"On section of lungs, microscopically, the left was in a condition of miliary tuberculosis throughout. No cavities. The right was riddled by cavity formation in its upper and middle lobes, the pleura being greatly thickened over the cavity area. The rest of the lung showed miliary tubercles and was almost consolidated.

"The liver was large, pale and smooth. Weight 14 ounces. Cut surface greasy in appearance and to touch.

"The spleen showed small gray tubercles over great part of surface. Weight $1\frac{3}{4}$ ounces.

"The heart and kidneys appeared normal. The intestines were pale in color, not distended."

"Specimens from the heart, liver, lung, spleen and kidneys were prepared and stained for showing bacteria in tissue. Microscopic examination failed to demonstrate either tubercles or bacilli in the heart or kidney, but in both liver and spleen the organisms were found present. In these latter organs they were found only enclosed in giant cells and not at all in the tubercles. In the lungs the bacilli were present in immense numbers, almost all through the specimens examined.

"Microscopically the liver was found to be in a condition of marked fatty degeneration."

Beside the condition of subcutaneous emphysema which in itself is of comparatively rare occurrence, the fact that the lungs could reach such an advanced stage of disease in so young a patient and with so little outward manifestation, together with the presence of a pneu-

mothorax, constitute the case described one of more than usual interest. In searching the literture for similar cases, some seven were found, described by Fowler & Godley, but of these, none occurred at a less age than three and a half years, and several of them followed the operation of tracheotomy, in which cases the air was allowed access to the subcutaneous tissues directly through the external wound instead of indirectly through some communication from the lungs, as must have been the case in the present instance.

In making a diagnosis the condition would have to be distinguished from oedema and from lesions dueto the action of the Bacillus Aerogenes Capsulatus. From the former the characteristic crackling sensation to the touch in place of the boggy pitting of œdema would be sufficient distinction. From the latter, the facts that (1) the gas appeared so long before death, (2) it originated apparently at a single point and then spread in the direction of least resistance, and (3) that no gas was found in the liver, spleen, kidneys or other abdominal organs, while not absolutely excluding the gas bacillus as the disturbing element yet together furnish a strong argument against it. The fact though that the gas ceased to spread after death would practically exclude the possibility of the condition being due to the gas bacillus as in that case it almost invariably develops most rapidly during the hours immediately succeeding the death of the subject.

CLINICAL DIAGNOSIS OF TYPHOID FEVER.

The following report of Professor Osler's paper, read before the New York State Medical Association at its last meeting, is from the *Medical News* of November 11th, 1899:

"There is no one symptom, nor two symptoms, nor three symptoms that are always present in typhoid fever. Any or all of the usual symptoms may be absent. We do not judge by a few positive signs. The diagnosis is a rational one, and must be often made on circumstantial evidence. Yet few diseases are so certain in their diagnosis as tyyhoid fever. These are particularly the words with which Elisha Bartlett begins his chapter on the diagnosis of typhoid fever, written in the year 1842. They are as true today as they were then, despite all the work that has been done on the subject since.

"For instance, very often we meet with cases in which, for from five to eight days, there is slight fever, and in which we sometimes can feel the edge of the spleen. If rose spots do not develop we are apt to call them simple continued fever. In a number of cases, however, after the cessation of the fever, patients have given the Widal reaction, showing that it was really typhoid fever. A recent epidemic in Switzerand was very interesting in this particular. Some thirty cases of frank typhoid fever were treated in the hospital. Twelve other patients, who had slight headache, moderate temperature, and general malaise, were not put to bed because they were considered not to have the disease. The application of the Widal test after their convalescense showed that they had had typhoid fever. The Widal test will undoubtedly greatly restrict simple continuous fever as we know it now.

"Too much insistence has been given to the abdominal symptoms of typhoid fever. It is very possible for the disease to occur absolutely without abdominal symptoms. Out of thirty-five cases that have been under his care during the last month only four patients have had distinct abdominal symptoms.

"Beside the enteric type, there are forms of the disease in which the cerebrospinal, the pulmonary and the renal symptoms are of most importance. Many cases of sporadic cerebrospinal meningitis are undoubtedly typhoid fever of the meninges. Very often the typhoid fever is concealed by the occurrence, in the midst of a more or less continuous fever, of a consolidation of one or more lobes of one or both lungs. Undoubtedly certain cases of so-called acute nephritis are really renal typhoid. The disease may run on without other symptoms until the development of rose spots betrays the nature of the disease. There may be no fever at all, or it may begin very abruptly; there may be rose spots, intestinal symptoms may be entirely absent, and so there may be no diazoreaction. The Widal test may be positive only very late in the disease, or may not occur until after the fever has ceased. There may be no leucocytosis.

"Repeated chills usually means malaria. The differential diagnosis of malaria is not so difficult as has been thought. No continued fever diagnosed as malaria here in the North in former times was probably anything but typhoid. The country was shocked during the Spanish-American war by the discrepancy of reports and the disagreement of doctors with regard to the existence of typhoid or malaria in the camps. It was not the army surgeons who were to blame, nor the profession of the country, but the teachers at our medical schools who have not insisted enough in the distinction between these two diseases. Malaria is such an accommodating word It covers such a multitude of diagnotic sins. It was at least as consoling in its way as the unctuous word Mesopotamia to the old woman in the story. Above Mason and Dixon's line an intermitten fever that does not yield to quinine is not malaria. Practically only tertian fever exists at the North, and this yields readily to quinine in thirty-six or forty-eight hours. At the South we have estivo-autumnal type, which gives rise to a remittent-fever. The curve reaches a fastigium and then does not vary by a degree perhaps for days. The temperature chart is like a map of the Pennsylvania Railroad; that of ordinary malaria is more like the multi-serrated line of the Baltimore & Ohio. The estivo-autumnal type may resist quinine for two or three, or even four or five days. The parasite of the disease, too, is harder to find, so that there is more reason for mistake in diagnosis. Out of a thousand cases observed at Baltimore at John Hopkins, in only one case did malaria and typhoid odcur together. In general and obscure febrile cases it is better to suspect typhoid than malaria. Our position in the matter should not be the Anglo Saxon one of thinking the case innocent of typhoid until proved, but rather the Galic position of considering the case guilty of typhoid until it is demonstrated to be innocent. Two works should be on every physician's table—Keen's 'Surgical' and Hare's 'Medical Complications of Typhoid Fever.'"

THE EARLY DIAGNOSIS OF TUBERCULOUS JOINT DISEASE.

BY LEONARD W. ELY, M.D.,

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The diagnosis of advanced tuberculous disease of joints is a simple matter. The discharging sinus, the distorted and shrunken limb, the ankylosis, and perhaps the visceral complications present a picture easily understood by the least skilful. The early diagnosis, when the disease is still curable and the return to function still possible, is somewhat more difficult, but really of more importance. In the early stages the disease is seen by the general practitioner or by the general surgeon, and he should be able to make the diagnosis correctly,

Perhaps in no class of disease does the axiom of the old English surgeon so well apply, that the eye should be used first and most and the hands last and least, The hands ordinarily should be used only to help the eye to bring out, as it were, the symptoms for the eye to interpret. Here the general surgeon errs more often than the general practitioner. He has been taught to educate his hands, to cultivate the "tactus eruditus," as he is wont to call it, and his first motion is to put his hand on the offending part. Of course he covers up what he should leave uncovered, and blocks his own way.

In the first place, for the diagnosis a history is needed, and a good one will often point clearly at the result later obtained with certainty. In a large percentage of cases, especially in young children (and with these our subject in the great majority of cases deals), an infectious disease will have shortly preceded the symptoms, and of these the principal ones will be measles, whooping-cough, and scarlet fever, and somewhat in the order named. Often a family history of tuberculosis will be obtained,* but whether more often than in any other disease is a question. Next will come the history of the present disease. A few cases come to the physician with deformity and without subjective symptoms, as far as he can ascertain. When deformity sufficient for recognition by the parents attracts attention, the diagnosis by the physician should be a simple matter. These cases will not be discussed here; their proper place will be in the discussion of the various deformities of special regions.

The first characteristic of the symptoms which strikes one forcibly is their gradual development. Often the time of first occurrence cannot be fixed. Next, they are essentially chronic. Next, though sometimes with slight ameliorations, they gradually grow more severe. If some indifferent mode of treatment is adopted, and the patient is seen again at the end of a week or so, he will at least be no better, and at the end of two or three weeks he will be worse than when first seen.

*The statements in this paper are based upon four hundred and fifty-three cases of tuberculous joint disease observed at the Vanderbilt Clinic between January 1, 1895, and January 1, 1899. Of these cases a positive family history of tuberculosis was obtained in sixty-eight, a negative in three hundred and nine, and in seventy-six the disease is not mentioned. For convenience, when two or more joints are affected each joint has been counted as a case.

Usually a history of trauma will be given. It is of little use, except for the purpose of excluding fracture or dislocation, for closer questioning brings out that the injury was sustained at a time from a year previous up to the time when the symptoms actually began. When the child limps or is stiff in its movements, the parental mind does not rest until it has remembered a fall or a blow, perhaps not even known to affect the region under consideration. In other words, the symptoms are separated by a distinct interval of time from the trauma, herein differing from contusions, fractures, and dislocations.

Pain and stiffness are two important symptoms. The pain is not exactly located; the patient does not press a finger down on a certain spot, but usually passes it over a region. It is worse on motion and is apt to come in paroxysms at night, when the muscles holding the joint quiet are relaxed. The "night cries" are notorious. The child cries out, and may be asleep by the time the parent reaches him. The stiffness in the morning is also well known.

The general condition of the patient is now to be noted, and then he is to be stripped. This rule knows no exception in children or in men. In women it should be modified but slightly. Next the attitude should be observed, and then the presence or absence of deformity or of change in contour. Here the first difficulty may be encountered by the unpractised eye in recognizing the departure from the normal; but this difficulty exists only in the trunk. In the limbs a guide is present in the limb of the opposite side.

Next, muscular spasm is to be looked for, and this will manifest itself, besides the visible spasm, by limitation of motion in the joint. Here again the same difficulty mentioned above is met, but here again it disappears in the limbs and remains only in the trunk. The joint of the well side is first put through all of its motions—flexion, extension, abduction, adduction, rotation—and the motions of the affected side are compared with these. Any attempt to force the range of motion in a diseased joint will cause pain. In order to elicit this pain the practice of striking the child on the top of the head or soles of the feet, of making him jump from a chair, is quite unnecessary. Sensitiveness to pressure need not be expected; hence the inutility of prodding the part with the fingers. It is no symptom of early tuberculous disease; nor is increase of temperature, except sometimes in joints which are near the surface, *e.g.*, the ankle.

The joints most liable to tuberculous disease in their order of frequency of attack are: 1st, spine; 2d, hip; 3d, knee; 4th, ankle; 5th, elbow; 6th and 7th, wrist and shoulder.* Affections of other joints are rare—so rare that they may be omitted from this discussion.†

A convenient classification will be: joints of the (1) lower extremity, (2) spine, (3) upper extremity.

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*The 453 cases quoted above showed the following distribution: spine 210, hip 155, knee 51, ankle 24, elbow 6, wrist 3, shoulder 4.

†Sacro-ilias disease, for instance, of which we hear so often, is really very rare. But one case appears on the records of the Vanderbilt Clinic for four years.

1. Joints of the Lower Extremity.

The first and usually the most prominent symptom is the limp—a limp, in accordance with what has been said above, persisting and gradually growing worse. Next comes pain. In hip-joint disease this pain is felt in the groin, thigh, hip, or knee; in disease of the knee it is felt about the knee; and in disease of the ankle, about the ankle. A feeling of stiffness is often present and is hard exactly to locate. It exhibits usually the morning aggravation.

The examination should be begun by observing the patient's gait, and he should then be placed upon his back on a table, the two limbs compared, and any difference in contour or in attitude noted.

In hip-joint disease the attitude of the affected limb will almost invariably be changed. Flexion will be present, and usually abduction or adduction. External or internal rotation is also frequent. The examiner must bear in mind that no one attitude is characteristic of this disease, as it is, for instance, of dislocation. The length of the limb will not be materially affected, measuring from anterior superior spine to internal malleolus, but the tape will show a diminution in girth of thigh and calf; in other words, slight muscular atrophy. This diminution will amount ordinarily to a half-inch or an inch. Spasm will be present in the muscles moving the joint, and also limitation of motion in all directions. Flexion may be measured in the usual method, flexing the knee at the same time (to relax hamstrings) and holding the other knee down on the table, or more nicely by gently flexing the thigh and watching the anterior superior spine. With a normal hip the anterior superior spine remains stationary until the thigh is in contact with the trunk, while, with a diseased joint, hardly does the thigh leave the table before the anterior superior spine begins to move, showing that the pelvis is moving, and that therefore there is a limitation of motion between it and the femur.

The range of abduction and adduction is observed best with the thigh and knee flexed at a right angle.

The amount of extension possible may be ascertained by bringing the child to the edge of the table, with the lower extremities hanging over, and noting which hangs lower. Or the child may be turned on his face and one hand placed on his buttocks to hold the pelvis on the table. Let the operator then grasp the ankle with his other hand and, having flexed the knee, attempt to super-extend the thigh. This will be found impossible if the hip joint is diseased.

There should be but two sources of doubt in a diagnosis, namely, contusion and bending of the neck of the femur. The symptoms of a contusion follow immediately an injury and disappear in a few days upon the application of an indifferent mode of treatment, such as a liniment or a spica bandage. Bending of the neck of the femur is essentially a disease of adolescence, is rare, is marked by shortening of an inch or so, and is accompanied by limitation of abduction only. The trochanter may be felt above Nélaton's line.

The knee. The attitude in tuberculosis of this joint is semi flexion. Usually slight swelling is present and should always be sought for with a tape measure. Both flexion and extension are limited. The well-known backward dislocation is distinctly a symptom of the later stages, and will not be found early in the course of the disease. Atrophy of the thigh and leg is an early symptom, and this with the limitation of motion and the chronic course renders a diagnosis from ordinary synovitis easy. Besides, in tuberculosis the swelling is apt to be doughy,

In disease of the ankle or tarsus the foot will be abducted. When the ankle is affected, the foot will usually be in equinus; when the tarsus is diseased, in calcaneus. The temperature will usually be raised, and atrophy of the calf and limitation of motion will be present.

2. The Spine.

An early diagnosis is here often difficult, sometimes impossible until deformity has taken place, but really more important than in any other region, because the deformity when once present, can never be removed. The guide possessed in joint disease in a limb, namely, the sound joint of the other side, is here of course absent.

It is necessary, in the first place, to bear in mind that, with the exception of a feeling of stiffness, the subjective symptoms will usually not be referred to the spine. They are caused by irritation of the anterior branches of the spinal nerves, and are referred to the regions of distribution of those nerves; hence pain in the chest, belly, or thighs, stiff neck, grunting respiration, etc., are apt to be the first causes of complaint.

The patient should first be viewed in the erect position and his attitude carefully noted; whether flexion of the trunk is present, or super-extension, whether he supports himself by his hands on the table or on his knees, or whether his shoulders look abnormally square, whether his head is thrown forward or backward, and whether deformity in the spine itself is present—all these should be observed closely. In some cases this last will be the first thing to draw the attention of the parents to the child's ailments. The synonym of the disease, "angular curvature," furnishes a good description of the deformity, and when present in marked degree it can hardly be mistaken. It is a "knuckle," a "bone sticking out," as the parents describe it. In its earlier stages it is not so well marked nor so characteristic; it is then not an angular projection, but an irregularity in outline, a change of contour.

Muscular spasm will cause stiff neck, rigid, square shoulders, difficulty in stooping, super-extension of the trunk, etc., according to the region affected. To demonstrate it in disease of the middle and lower spine, the patient should be laid flat on his face with his arms by his side. His feet should be then lifted in the air. With a diseased spine the back muscles will be seen to spring into prominence in tight contraction, and the spine in the region of the disease to be rigid. In cervical disease the spasm may be elicited by movement of the head.

No results can be obtained by poking the spinous processes to find tender or painful spots. Cutaneous sensitiveness does not exist in tuberculosis of the spine.

A change of contour is present in rotary lateral curvature, but here the curve is from side to side, while in tuberculosis any lateral curve is slight and comes on at a late stage. Spasm of the back muscles is absent in rotary lateral curvature, and any pain will be more in the nature of a tired feeling. Again, in the latter affection the apex of the curve appears to be along the ribs, not on the spine itself.

Round shoulders or round back possesses the anteroposterior curvature, but the deformity is a curve, not an angle, whereas in tuberculosis of this region (the upper dorsal) the deformity is always angular from the start. In round shoulders muscular spasm is absent also.

Rachitic curvature will be accompanied by the other signs of rachitis and not by muscular spasm, and will affect the entire spine with a long, gradual convexity.

Ordinary wry neck can be recognized by its acute onset, its rheumatic or tonsillar history, and by its tendency to affect a single muscle, especially the sterno-mastoid. Caries affects all the muscles in the vicinity of the disease. In a few cases the subsequent course alone will make a possible diagnosis possible.

3. The Upper Extremity.

The elbow. The diagnosis here is usually simple. Muscular spasm and limitation of motion are early symptoms, and atrophy of the arm and forearm is present. The joint is swollen and is held in semi-flexion and semi-pronation. Rheumatism is differentiated by its acute onset and its tendency to affect several joints.

What has been said of the elbow applies to the wrist, except that in disease of the wrist the hand has no characteristic posture, and the atrophy of the arm would be slight.

In disease of the shoulder joint the usual symptoms of tuberculous disease are present. One disease resembles it, the so-called rheumatoid arthritis, but this is is essentially a disease of later life, and is apt to be accompanied by a grating in the joint.

In conclusion, let it be said that, after thorough examination of the case, if any doubt remains, rest and a liniment should be prescribed, a positive diagnosis should be withheld, and the case kept under observation for two or three weeks. A diagnosis of "growing pains" may be disastrous, and nothing is lost by a short delay if the child is kept quiet.—*Medical Record.*

BACTERIURIA.

Dr. August Predhol (*Munchener medicinische Wochenschrift,* November 7th) says that this condition is more common than is generally supposed. Cases may be divided into acute, subacute, and chronic, or again into very severe, severe, and mild. This classification does not, however, comprise and cover all instances, even though the most severe of the cases was an acute one, the next severe case a subacute, while the cases becoming chronic were for the most part mild. All the patients were women, and it may be reiterated that this condition is frequently observed in the female sex. The onset of the disease is in some instances always about the same, in others quite varied. Common to all is the beginning with burning pain upon urination, which occurs only or mostly upon evacuation of the last few drops; this may reach a point of tenesmus, with dropping of urine and increased desire of urination even to incontinence. Varied were the bladder pains, pains in the region of one or both kidneys, which were designated as backache by the patients, but which upon close questioning and examination could be localized in the renal region. This condition suddenly attacks individuals whose previous health has been good and occurs without any previous etiological basis. Euposure to cold, long retention of urine, and habitual constipation play some part. The urine is always cloudy, does not clear up when heated, contains no albumin, is acid in reaction, and shows nothing definite with the ordinary chemical examinations. The urine looks like a weak soap water; indeed it may be compared to a hazy bouillon culture. In some instances it has a very pronounced and disagreeable smell; most generally, however, there is no bad odor. In some cases the patients seek medical aid only on account of the bad-smelling urine. If this urine is centrifuged or left to sediment, the deposit is found to be made up of micro-organisms, which prove to be bacterium coli in all instances. Pure cultures were also grown from the sediment. Microscopical examination of the urine shows only epithelia in addition to the above; in other words, the absence of any bladder or kidney disease. In some cases this condition is followed by disease of these organs or the abdominal viscera. Many instances are looked upon as mild cystitis and intestinal colic. The patients are generally slender, pale, moderately nourished individuals, who do uot feel sick; in some cases, at the time of the attack, the patients feel very sick. The term bacteriuria is used only for such cases in which, in healthy individuals without any clinical evidence of inflammatory processes in the genito-urinary tract, and without definite cause, micro-organisms are found in the freshly-evacuated urine and give rise to symptoms of disease. This, therefore, does not include those instances in which bacteriuria is secondary, that is, those in which an inflammatory or diseased area previously existed, thus enabling the bacilli coli to gain entrance into the urine. On the other hand, bacteriuria includes such cases in which, as the result of the condition, cystitis, pyelitis, nephritis, or disease of the genitals occur. Bacteriuria pure and simple often disappears without any treatment; treatment is purely symptomatic. Salol has given the best results. Analgesics have no effect; iron is very useful. Warm baths are indicated; opiates are some-

times absolutely necessary. In some cases an ice-bag over the bladder region gives excellent results. The bowels must be freely evacuated. There is no specific drug for this condition. Letzerich recommends benzoate of sodium. The prognosis is always doubtful. While in some instances bacteriuria appears to be harmless, still it is always very difficult to get rid of and render the urine absolutely free from bacteria. The disease therefore, is always to be looked upon as serious.

PRACTICAL POINTS IN THE TREATMENT OF CYSTITIS IN WOMEN.

BY DR. CHARLES WILLIAMS, PHILADELPHIA, PA.

When it comes to actual experience in the treatment of this common and often baffling condition in women, the practical physician is frequently put to great stress to devise the proper plan for the cure of each case; for the lines laid down in the text-books are often inadequate and even misleading, while the results of his experience in one case often are of no value apparently in another patient suffering from the same disease. In considering the treatment it is well to divide the plan of attack into local and constitutional treatment. It is well to remember also that both of these must vary according to the cause and characteristics of the inflamation. In the first place, it is always essential to think first of the possibility of the existence of a continuously acting cause, such as stone in the bladder or retained urine going on to decomposition. Such conditions as these must be removed if we hope for definite improvement.

The following plans of treatment are those that have met with success in my hands: In acute cases the pilliative plan is to be pursued, but in all cases constitutional treatment is of the greatest importance; we must at the outset so regulate the character of the urine that it will cease to be an irritation to the bladder. Pains and tenesmus are the two great symptoms complained of by the patient, and they both demand early attention, for they are great factors in the management of the case. The whole surface of the body should receive attention, and the emunctories should be kept in an active condition; the bowels also should be kept in a fairly free condition to prevent the effect of straining. For this purpose saline laxatives are the best. A glass of the natural purgative mineral waters one-half hour before breakfast may be taken, or one or two teaspoonfuls of the phosphate of sodium in one-half a glass of water, this treatment may be kept up continuously for some time. The patient will have to find out for herself the exact quantity she requires, for some need as much as a tablespoonful. It is more efficacious in hot water. Finkel recommends the use of saline laxatives even up to the point where there is real intestinal hyperemia for a time, in order thus to divert the blood from the bladder. Any deranged condition of the nervous system which tends to produce an irritating urine should be investigated.

Indigestion has been mentioned as one of the predisposing causes. This should be treated, if it exists, with suitable diet and medication. Cystitis may be aggravated by such a condition, and this is certainly true of a

rheumatic or gouty tendency. The patient should have a milk diet, always guarded, I think, with lime water, no matter how it is taken, hot or cold; it makes the milk more digestable to all patients. Then hot milk with a little salt makes a good variety, still with the lime water added. Sometimes we can vary this by pouring the milk over bread that is toasted and thoroughly dried, then pouring away from the bread before taking. The diet should always consist largely of fluids—eggs and soups. The Franco-American soups and bouillon are excellent; lamb broth should be strained to make it clear; and raw eggs beaten up in milk can be given. If the patient is very prostrated a little stimulant can be given, being very guarded in its use. Whiskey I prefer to anythink else, because it is more stable. If we want to vary the diet still more, we may give lean meat in small amounts. For vegetables, I specially like those that grow above the ground, as lettuce, celery and spinach. Cold-slaw does now always disagree with these patients. The diet is of importance. If the cystitis depends on a gouty or rheumatic condition, avoid red meat; the white meat of fowls and fish makes a good diet.

In acute cystitis we may give diaphoretics. The patient should have rest. Diuretics also are indicated if the urine is loaded with solids. Vichy water with flaxseed tea and other demulcent drinks can be given. Care should be taken not to push the diuretics too far.

What shall we give to relieve pain? Opium is indicated in the form of Dover's powder with camphor every three or four hours, or if necessary morphine hypodermically, injected until two or three doses have been given, or until we find that the patient gets six or eight hours rest at night. These should be given by the physician only. Then during the day we can make the patient comfortable with codeine. I prescribed this for a patient recently—one-fourth grain codeine with camphor, one dose to be administered every hour until three had been taken—that is, if the third was needed. It is plain that codeine does not cause constipation and itching of the skin and nausea as do the other preparations. Then I think in giving codeine one thing is certain; the taste and desire for it do not increase as for opiates. We must do something that will relieve pain for months, and even, as I have known in one case, for two years. While we may use opium at the onset of acute cases, and at the end in cases of very old people, we hesitate to use it in general chronic cases. But when the women is over eighty years old, as in an interesting case of mine, where cystitis was produced by stone in the bladder, and where the urine had to be passed every fifteen or twenty minutes night or day, we feel justified in producing narcotism. This old lady wore out nurses one after another. Finally I left her in the care of another physician during an absence of two months. She lived until I returned, and died two days after. She died from the irritation produced by the stone in her bladder. Now it will probably be said, "Would a physician allow a patient to suffer for two years without resorting to operation?" But here is a patient over eighty years old, who had opisthotonos, and who had degeneration of the arterial walls. Yet while it seemed unsafe to resort to etherization for an operation, I should have been willing to risk it if the patient and friends had been willing. It was remarkable that a person should suffer

so long as she had before resorting to any kind of treatment. The last few times I visited her it seemed impossible to give her enough opiates to keep her sleeping for two hours at a time.

Opium is very apt to derange the digestive organs and the secretions, especially of the kidney. If there is frequent urination and the tenesmus is severe, give, say, fifteen grains of equal parts of potassium bromide and ammonium bromide in camphor water or plain water, repeated once or twice a day. It will sometimes respond to this treatment when it does not to opium. Or give eucalyptus oil in doses of two to five drops, or the tincture in fifteen drops or more; we know this has a well marked effect in albuminuria. Benzoic acid is perhaps the most useful in a large number of cases. It is what I always resort to in the beginning of acute cases, or when I first take charge of an older case. It seems to act like a specific, giving speedy relief:

℞ Acidi benzoas..... gr. v-x.
Inf. buchu.
M. Sig.: Three or four times a day.

Or I like to use the benzoate of ammonium:

℞ Ammonii benzoat ..... ℥ iij.
Inf. buchu..... f ℥ iv.
M. Sig.: A teaspoonful every two hours, or a tablespoonful three times a day.

Remedies which have a direct effect on the mucous membrane are to be used in the advanced stages, and in this list are copaiba, balsam of Peru, and tar; they can be given in capsules. All these may be tried in cases that are evidently due to some exciting cause that we fail to recognize. Oil of turpentine may be given in capsules. I think they usually prefer it in water or on a lump of sugar.

If the physician is possessed of a good battery, for local farazidation this may be used, one electrode being placed over the spine and one over the bladder. It is claimed that this has been followed by cure—when, of course, there is no demonstrable lesion.

But when all these remedies fail, we must resort to the radical and surgical means. The bladder is distended and washed out. The proper and frequent washing out is very important. We should never trust it to a nurse until she has been given careful directions. In washing with warm water add a little salt to about a pint. The fluid is apt to give pain if the specific gravity is below that of urine, hence plain water should never be used. A fountain syringe may be used with a recurrent catheter attached. Often a vesical pain is relieved by the injection of a solution of morphine. One little point is to be observed is to avoid too rapid distention, forcing the bladder unduly. Use a catheter that enables the physician to control the flow. Or use a glass catheter and attach a rubber tubing and funnel, then pour the water into the funnel; this can be done slowly. Another little point is that air must not be driven into the bladder. We must pour some water first through the catheter before putting it into the bladder. A comfortable temperature for the water is 110° F. Now pour the water in and gradually distend. Perhaps we can introduce only a couple of ounces the first time. But we can coax the patient and coax the organ to a degree of tolerance. It is an important point to get the bladder back to its normal condition of holding urine

In some cases we wish the water to pass in and directly out again;. then we should use this double catheter. It allows the water to run out without removing at all, or causing any discomfort to the patient by taking off the rubber tubing. We may take a hard-rubber or a glass catheter if caustics are to be used at all. The washing out should be done two or three times a day. Some one of the family or a nurse must be taught to do it.

Having prepared the bladder by washing, we may apply our medication. Anodynes are most happily used, remedies which produce local anesthesia. We will see perhaps in most of the text-books the solution of cocaine recommended. I would say that it may be used once or twice. It cannot be used with safety more than that, except at very long intervals. It is an irritant, it is not very effective on some mucous membranes, and when it is used in the throat or nose or mouth it soon loses its comforting power. Astringents and alteratives are most commonly used, especially silver nitrate, zinc sulphate, and tannic acid. Potassium chlorate is very useful. When a strong solution of nitrate of silver has been used, always follow with a salt solution.

When the urine is alkaline and has been retained for a long time, carbolic acid may be used, two minims to an ounce of water. Now in using carbolic acid never use it without first mixing it with glycerin. It can be thoroughly mixed with water if the manipulation is carried far enough. A case once came to me for treatment where a vaginal douche with carbolic acid had been ordered. But evidently the carbolic acid had not been mixed with the water, and floated as an upper layer. It ran over the vulva and nates and produced a mass of sores. It makes a sore place which is pretty hard to cure. So I made it a rule always to order it mixed with glycerin, and often we can have it mixed at the drug store.

We are told that cystitis is always the result of infection; at any rate benent comes from the use of bichloride of mercury. All of the books tell of the value of silver nitrate in inflammatians of the bladder. I have always used a twenty-grain solution, and I am surprised how little pain is produced by it. If we use a sixty-grain solution it should always be followed by a bath of the normal salt solution, and only a very little should be introduced at one time. Even if only a twenty-grain solution is used only a few drops should be injected at a time.

Instillation is a favorite method of treatment with many. This differs in that the medication is injected in very small quantities and allowed to remain longer. An instillation tube is something like a medicine dropper. There are some that are very nice and some that are not safe to introduce into the bladder. Those that are like an eye-dropper, with a round bulb on the distal extremity and perfectly smooth, are not in danger of hurting the mucous membrane. Silver nitrate and sublimate solution and emulsions of iodoform may be introduced in this way. A good remedy to use is the iodoform pencil; it is introduced into the urethra and followed up by pressure of the catheter or applicator. An application that is often very comfortable is:

Carbolic acid	♏ x.
Glycerin	f ℥ j.
Lime-water	f ℥ iij.

I think I never used anything in cystitis with better results. It can be used every other day; sometimes I dilute it. Make it hot or warm; never introduce anything into the bladder while cold.

A more directly topical treatment is done by inspecting the mucous membrane of the bladder through the urethra, illuminating with the headlight, and carrying the application directly to the spot. We have a very small opening through which we must work. This is better sometimes than putting medicine over areas that are not inflamed. The bladder is said to be affected more often over small areas than over the whole surface, yet I must say that those I have examined had the appearance of a general inflamation.

If all our efforts have failed so far, it is because the bladder has not had sufficient rest. We have not given the chief indication for rest. We may have to resort to something to establish an opening that will carry off the urine as soon as it is emptied into the bladder; we may have to make a vesicovaginal fistula.—*The Medical Age.*

CONJUNCTIVITIS.

TREATMENT.—Infectious conjunctivitis is understood by Dudley S. Reynolds* to include all forms of conjunctivitis that are contagious or communicable from one person to another through various media. All the infectious or catarrhal types of conjunctivitis are retarded by the use of alkaline lotions, and all are intensified and greatly aggravated by the use of stimulating astringents and caustic applications. The treatment by irrigation is the only rational mode of cleansing.

In the white staphylococcic forms of infection the irrigation may be practiced with normal salt solution, or with the following:—

℞ Borate of sodium, 3 ounces.
Chloride of sodium, ½ ounce.
Cryst. carbolic acid, 15 grains.
Water, 1 gallon.

The upper lid being everted and the irrigating-bag being hung twelve inches above the plane of the patient's eye, the nozzle of the irrigator may be held over the bridge of the patient's nose and the fluid allowed to run over the everted lid and the inferior retrotarsal surface into a mass of absorbent cotton held on the temple. This should be repeated every half-hour, and when the matter accumulates sufficiently to exude between the lids this interval should be shortened by one-half. If no accumulation of matter appears, the interval may be increased until there is no necessity for the repetition of the irrigation.

In the yellow staphylococcic infection the treatment may be precisely the same; however, in some cases the irrigation must be repeated at intervals of ten minutes during a period of two or three days and nights.

*Med. News, Oct. 28, '99.

In the gonorrhœal type the same plan may be pursued, but a more efficient irrigation may be made by dissolving 3 ounces of chloride of sodium, 8 grains of bichloride of mercury and ½ drachm of carbolic acid in 1 gallon of water, which should be filtered before using. With this the eye may be irrigated every ten minutes from the very beginning of the attack. Care should be taken never to allow the nozzle of the irrigator to approach nearer the infant's eye than one inch. To perform the irrigation properly two persons are required. Having prepared the irrigation and placed the patient on his back, one person may evert the lid and hold a mass of absorbent cotton-wool on the temple to catch the outcoming discharge, while the other manipulates the irrigator.

In the different varieties of conjunctivitis, and especially in those accompanied by marked discharge, as the acute contagious and the purulent, Clarence A. Veasey* has found solutions of toluidin-blue of special value The drug, according to Merck, is prepared by oxidizing a mixture of thiosulphonic acid and orthotoluidin with a chromate to an insoluble sulphonic-acid green, then boiling the latter with a zinc-chloride solution, and subsequently oxidizing the leuco-compound. While considered a zinc-chloride double salt of dimethyltoluthionin, its composition shows it to be an hydrochlorate. The strength of the solution that has given the best results is 1 part in 1000. The affected part should be cleansed first with some cleansing lotion,—boric-acid or salt solution,—sufficient force being used to get rid of the accumulated secretions, and then the part should be flushed thoroughly with the solution of toluidin-blue, and, after it has remained in contact with the parts for a while, the excess is to be washed off with the boric solution. As every particle of mucus or muco-pus is stained a deep blue, none can remain on the conjunctiva without being detected. The stain on the fingers and surrounding skin is readily removed with a moist pledget of absorbent cotton. The more copious the discharge, the more frequently the instillations have to be made.

Edward Jackson† says that acute conjunctivitis includes, in addition to the effects of eye-strain and local irritants, at least five specific infections; and that successful treatment depends on the careful discrimination between the different classes of cases. Eye-strain is always to be thought of and eliminated. In all forms of conjunctival infection complete cleansing at sufficiently-short intervals is of the greatest importance Protargol is to be employed for purulent conjunctivitis, with a few applications of a strong solution of silver nitrate in bad cases. Mydriatics and cocaine should not be prescribed for acute conjunctivitis. To secure the greatest cleanliness of the conjunctiva and to limit the dangers of infection all forms of poultice, bandage and compress should be carefully avoided.—*The Monthly Cyclopædia of Practical Medicine.*

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*Ther. Gaz., Sept. 15, '99.

†Med. News, Sept. 9, '99.

APPENDICITIS.

ETIOLOGY.—No one factor can be held answerable for the production of all cases of appendicitis. Although the disease is, almost without exception, the consequence of micro-organismal infection, it is rather of complex pathogenesis, and no one morbific agent is provocative of all attacks. It is because of the anatomical and physiological peculiarities of the appendix that factors innocuous in the intestine, or morbific agents capable of being successfully counteracted by the physiological activities of the intestine, become, in the appendix, of heightened virulence, and engender the most disastrous consequences.—A. O. J. Kelly (*Phila. Med. Jour.*, Nov. 25, '99.)

TREATMENT.—The following is a summary regarding the operations for appendicitis:—

I. Should every case be operated on as soon as the diagnosis is made?

As a rule, the appendix should be removed if the diagnosis is made in the first hours of the attack.

After the early hours operation is advisable: 1. If the symptoms are severe, and especially if they are increasing in severity. 2. If the symptoms after a marked improvement, recur. 3. If the symptoms, though moderate, do not improve.

The wisdom of the operation is questionable: 1. In severe cases in which an extensive peritonitis is successfully localized and the patient is improving. 2. In cases which are at a critical stage and which cannot cannot successfully undergo the slightest shock.

II. Should the appendix be removed in every case?

It should not be removed: 1. In localized abcesses with firm walls. 2. When the patient's strength does not permit of prolonged search.

It should be removed whenever the peritoneal cavity is opened, unless the patient's condition forbids.

The appendix should be removed in all cases as soon as the inflammatory process has had time to subside completely: in from two to three months after the attack. In cases simply drained the scar-tissue should be excised, the appendix removed, and the wound securely sutured. —Maurice H. Richardson (*Amer. Jour. Med. Sciences*, Dec., '99.)

THE MEDICAL ASPECTS OF THE BOER WAR.

BY A SOUTH AFRICAN CAMPAIGNER.

Proportion of Killed to Wounded.

In the battle at Graspan, or, as it is to be called, Enslin, the losses, which fell principally upon the Naval Brigade, were 24 killed, 166 wounded, and 7 missing. Here we have again to note the happily small proportion of those actually killed among the number hit. The Boer force encountered at Graspan probably consisted of the remnants of the Belmont force together with other fresh commandoes, and the rifle employed in all probability was principally the Mauser. At the first engagement at the Modder River, where Lord Methuen's force found 8,000 Boers posted in exceptionally strong positions, the casualities, although severe (73 killed and 365 wounded), were lighter than had at first been anticipated. This brings the total casualities for the three actions up to 966 killed, wounded, and missing.

	Killed.	Wounded.	Missing.
Belmont.....	54	238	2
Graspan.....	24	166	7
Modder River.....	72	396	7
	150	800	16

This gives a proportion of killed to wounded approximately as 1 to 5.3. The proportion of killed to wounded varies in different campaigns, and of course depends to a considerable extent on the conditions under which actions are fought, the tactics employed by commanders, and the distance usually maintained between the opposing forces, and finally whether or not the engagements in a campaign consist for the most part in attacking entrenched positions where one side is exposed at short ranges.

Colonel Stevenson, R.A.M.C., Principal Medical Officer on the Line of Communication, in his work entitled "Wounds in War," gives some interesting statistics on this point. Thus in the Russo-Turkish war, 1877-78, where entrenched positions were continually attacked at short ranges, the proportion of killed to wounded among the Russians was as high as 1 to 2.1; at Blenheim in 1704 it was 1 to 1.3. The late Sir Thomas Longmore, summing up the available statistics on this point, showed that the proportion of killed to wounded has been, on an average, 1 to 4. These figures refer to the number of dead found on the field; while of those who reach the hospital alive, a large proportion died during the first two or three days, but these were not included in the figures given above. During the Russo-Turkish war, 1877-78,* 11.8 per cent. of the wounded died in the army of the Danube, and 30 per cent. in the army of the Caucasus. We may, therefore, conclude that we shall not be giving a

Compe-rendu du Service de Santé Militaire pendant la Guerre de Turquie de 1877-78. Par N. Kosloff, 1887.

too sanguine estimate when we predict that at least 87 per cent. of our wounded in South Africa will eventually recover. Fischer, whose statistics are probably the most accurate on this subject, gives the proportion of killed to wounded as follows:

At the battle of Kunnersdorf, 1759	1 to 1.9
At the battle of Leipzig, 1813	1 " 2.0
English in Crimea	1 " 4.4
French in Crimea	1 " 4.8
Prussians in Schleswig-Holstein, 1864	1 " 1.8
Prussians at Koniggratz	1 " 3.6
Austrians at Koniggratz	1 " 3.0
Germans in 1870-71	1 " 5.4
Russians in 1870-78	1 " 2.1

This gives an average of 1 to 3.2. It will thus be recognized at once that the proportion of 1 to 5-3 which is that for the battles of Lord Methuen's march, is considerably below the average of past campaigns, and is curiously enough almost identical with the loss sustained by the Germans in the campaign of 1870-71. It must further be borne in mind that these battles have all been fought under exceptional arduous conditions for our men, inasmuch as they have in every instance been storming strongly held and partially entrenched positions.

Nature of Wounds.

Your special correspondent in Capetown is able in a recent letter to give some account of the wounds sustained by our men. Speaking of the cases which he had seen in the Wynberg Hospital, he says that all are Mauser bullet wounds except two; he also says that all the men agree as to the very small amount of shock produced by the Mauser bullets, and the slight amount of actual pain at the time of being hit; he also says that one noticeable circumstance is that the majority of the wounds are in the extremities, and from another source we hear that they are principally in the legs and abdomen. This the men themselves attribute to the wild firing of the Boers. As a matter of fact, it is an old tradition with the rifle to fire at a man's feet, as the bullet fired a little low will ricochet and do great damage, while if it be fired too high it passes harmlessly into space. There was a tendency with the Martini-Henry, and still more with the old Snider for bullets to rise above the point aimed at; hence the additional incentive to fire at the enemy's feet. The Lee-Metford and Mauser rifles are more accurate than the Martini-Henry, and this probably accounts for the fact of so many wounds being inflicted in the lower extremities. The bullets actually struck the object at the point aimed at. It is gratifying to think that not only are Mauser bullet wounds frequently almost painless at the time of infliction, but that a large number of them heal rapidly by first intention, a course which was rarely followed by the wounds from bullets of larger calibre.

Lee-Metford *v.* Mauser.

The bullets which our troops are using in the Lee-Metford rifles is known as the Mark II. It is a far less formidable bullet than either the Mark IV or the Dum-dum, but, nevertheless, has a slightly greater smashing power than the Mauser bullet. What the proportion of killed to wounded among the Boers may be we are, from the figures supplied, unable to estimate. I commented in my last letter on the extreme importance in the campaign of keeping the railway open, and it is extremely gratifying to note that Lord Metheun in his rapid march has done this most effectually with the Kimberley line When the Modder River bridge is once negotiated there will be little difficulty in completing the restoration of the line up to Kimberley. The value of the railway for transport purposes as well as for dealing with the sick and wounded is incalculable. It is pretty evident that the repairs to the permanent way on the ordinary veld are very readily effected. I have had some experience of what may be done in a few hours in this way in South Africa. On one occasion the train on which I was travelling, having run into a cow, was disrailed, the engine was thrown on its side and the metals torn up. In the course of five hours a new track had been made passing round the scene of the catastrophe, a fresh engine had arrived on the scene. and the whole train, with the exception of the capsized engine, proceeded on its way. Navvies with spare rails and sleepers, may be readily conveyed to the scene of damage, and repairs in this way be very radidly effected.

Medical Arrangements for the Army in South Africa.

In view of the large number of men now with the army in South Africa, the Army Medical Department have considerately published for the information of the public details of their medical arrangements. The whole or part of this document has already been published in many daily papers. It informs us that every regiment, battalion, artillery division, and engineer company, has a medical officer attached to it, and he accompanies it into action with his orderly in order to administer first aid to any man who is wounded, while the regimental stretcher bearers are ready to carry the same to the dressing station or field hospital. There will be 45 surgeons in immediate charge of the men composing the Army Corps. They are also responsible for the sanitation of their respective camps. There is a bearer company for each brigade of cavalry and infantry; this is composed of 3 officers, the officer in charge being a major, a sergeant-major, 12 sergeants and corporals, 44 privates, and a bugler, all of the R.A.M.C., in addition to which there are for transport 38 men of the Army Service Corps, under a warrant officer. The mode of working is described as follows:

"Two stretcher sections under an officer, each section consisting of four stretcher squads under a sergeant, collect the wounded and carry them to the collecting station, a spot chosen as near the fighting line as possible, but sheltered from the enemy's fire. The collecting station is in charge of a sergeant, who has a supply of dressings, etc., to replenish the haversacks of the stretcher bearers. Here also are placed the ambulance

of the first line ready to receive them, under the sergeant's direction, and bear them back to the dressing station. The dressing station is on a site selected as being, if possible, out of fire, near a water supply, and also near a road. When available buildings are chosen, and if not the operating tent is here pitched, and instruments, medicines, and medical comforts are arranged ready for use, and a fire lighted for heating water. It may be considered the most important potition in the journey of a wounded man from the field towards the camp, as it is here the first opportunity occurs for a careful examination of his condition. The major of the company and another medical officer are here placed, with a separate sergeant-major, three non-commissioned officers, and four privates, including a cook. The wounded, being carefully attended to and dressed, are now placed in the second line of ambulance and taken to one of the field hospitals, which are encampments attached to each brigade or each body of troops large enough to render it desirable. The equipment of a field hospital is for 100 beds, but it is so arranged and packed that sections of 25 beds can be utilized separately if required. As it must accompany its brigade on the march, it is movable, being supplied with means of transport; but it is equipped with a view to make it as comfortable and complete as its mobility will permit of. From the railway line the sick and wounded are conveyed to the base, which is at or near one of the ports of embarkation."

Horse Sickness.

Since my last letter an interesting description of the South African horse sickness has been published by Professor Wallace in the *Times*. He has been at some pains to collect the latest bacteriological evidence with reference to this disease and says that:

"Numerous experiments by the Director of the Bacteriological Institute at Grahamstown have showed that no material can be obtained from the bodies of animals which have died of the malady which could be used in producing immunity in healthy animals. The use of serum from animals which have recovered from the disease has already proved abortive. A measure of success has, however, attended the inoculation of horses with infected donkey's blood and with an attenuated virus got by transmission of a virulent virus from partially immune animals. By this means a mild form of the disease is produced; a period of at least fifty days is allowed to elapse, during which secondary attacks of fever and moderately high temperatures occur at frequent intervals. By repeated mild attacks the system is fortified against subsequent inoculation more effectively than by an attack accompanied by high temperature. The secondary fever which occurs to a horse after recovery from a natural attack is termed by the Dutch 'Anmanning,' and until the first of these returns have passed off the animal is not fully protected or 'salted.' Inoculation in any form is consequently out of the question in connection with the preservation of the animals engaged in the present campaign."

Under these circumstances we may still conclude that the best practical remedy available for our troops is that recommended by me in

my letter, namely, the provision of nosebags to act as air filters through which the animals breathe, and they should be worn from sunset until the dew is well off the grass on the following morning. Horse sickness (œdema mycosis), according to Professor Wallace, is a fever produced by a micro-organism one of the filamentous fungi which under suitable conditions of heat and moisture grows in the veld, but whether in the water, on the soil, or as a parasite, is not yet known.—B. M. J.

"THE THERAPEUTICS OF WHOOPING-COUGH."

F. J. TAYLOR, M. D.

There is a South German proverb which says "that whooping-cough lasts till it stops," meaning by this, that treatment has but little effect on its course. It is to be hoped, however, that they are right, who at the present day dèny the truth of this saying.

There is no specific treatment for whooping-cough, since the cause of the disease is unknown. Nevertheless, many useful things may be done to increase the prospects of recovery.

The prime object of treatment is to lessen the frequency and severity of the fits of coughing, and to assuage the irritability of the upper air-passages.

As the disease is limited in duration, it is manifest that if the strength of the patient can be maintained and accidents can be avoided he will recover.

The various modes of treatment of whooping-cough may be classified as follows:

1. Prophylactic.
2. Hygienic.
3. Medical.

I. Prophylactic: Because of the danger and great infectiousness of whooping-cough, every effort should be made to guard children from the disease. Isolation and disinfection are as important and powerful in suppressing the contagion of whooping-cough as that of any other disease of the class. It is a disease which is not usually recognized, and for which the physician is not called, till a week or more has elapsed, during which time the other members of the household, and probably of the school, are exposed to infection. Hence, isolation is rarely practiced, and mothers among certain classes even adopt the pernicious practice of allowing their children to be exposed, on the ground that they must have whooping-cough sometime, and the sooner they have it and are over it, the better. The idea should be combated wherever found; for, the older a child is, the better able is he to resist the debilitating effects of the disease; while in infants the danger of a fatal result is considerable.

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*Read before the Maine Medical Association, June 7, 1899.

Because of the fact that most cases are improved by being taken into the open air, the disease is continually met with, not only in public places but in public vehicles. The infection is usually transmitted by the breath and secretions; yet it is possible for the disease to be carried by a third person from the sick to the well by means of handkerchiefs or clothing. It is impossible to determine exactly how long infectiousness continues, but ordinarily it ceases entirely at the end of two months after the onset of the disease. Several observers have made the statement that vaccination greatly modifies the course of whooping-cough. In some of the cases coincidence may have had much to do with the apparent action of the vaccine infection. In others it is readily possible that one disease may have modified the course of the other. Deeper investigation upon this subject is required. It is possible that at some future day inoculation with the attenuated virus of whooping-cough will be practiced.

After death or recovery, rooms and their contents should always be disinfected, although it is not probable that the poison survives long outside the body.

II. Hygienic treatment is of the greatest importance.

If we accept the germ theory of the disease we shall understand the usefulness of ventilation, not only as supplying fresh oxygen to the patient, but in destroying the germs in the expired air of the room, and possibly to a slight extent in the air passages of the patient. The living-room of the little patient should have the air of an even temperature, preferably about 68° F. It should be free from draughts and yet well ventilated. The chief peril to life lies in the probability of pulmonary inflammations; but experience has abundantly demonstrated that the confinement of children in even well-ventilated apartments has a distinct tendency to aggravate the symptoms, so that very great judgment is often required in obtaining out-door air without exposure. In summer the children should be out in the open air the whole day, when the weather is fine; in winter out-door exercise should be confined to dry still days in which the temperature is not too low. Winds are even more dangerous than dampness. In some cases the best results are to be obtained by the use of large apartments with very free ventilation. Great stress should be placed on the fact that the child with whooping-cough *should be fed often*. A paroxysm of coughing is very likely to end in vomiting; and if the child has recently taken his nourishment, the stomach is emptied and the patient must suffer in consequence. In such cases he should take a little easily digested food after each act of emesis. If the patient will take them, four to six eggs a day are not too much for a child of four years, in addition to four to six ounces of meat juice, with perhaps other foods. If only a small part of this is absorbed, it will quite effectually prevent any loss of weight or any great loss of strength; but it will *never* do in a severe case to rely on the usual three meals a day; there would better be a dozen meal-times a day than three. The fact that one of the dangers in this disease is that tuberculosis may follow, makes it important that the child's nourishment should be kept high. Warm flannel undergarments should be worn, and especial care

should be taken that the patient does not become chilled at night by tossing off the bed-clothing. In advanced whooping-cough the greatest benefit is sometimes obtained by change of air. Excitement and over-exercise should always be avoided as they are liable to bring on a paroxysm of coughing. Keeping the patient up to his most perfect standard of vigor, lessens the number and force of the paroxysms. It is far better to restrict ourselves to these simple hygienic methods, than to resort to any form of treatment which reduces the strength of the patient; for reduction of strength renders the patient less able to resist the debilitating effects of the disease, and makes him more liable to dangerous complications.

III. The medical treatment is naturally divided (*a*) into that which is directed against the nervous elements of the disease, (*b*) that which has to do with the catarrhal condition, (*c*) and lastly that which is directed towards the general support of the system. The mildest cases require only careful supervision or are easily relieved to a very satisfactory extent by medication. In the severe cases, on the other hand, the condition is far different. Here we must be ready to employ one plan of treatment after another until something of benefit is found; for there is no disease of which it is truer, that the treatment which has acted like a charm in one case or series of cases, may fail utterly in another. Then, too we must not fail to employ our remedies in sufficiently large doses before decrying them as useless.

(*a*) To lessen the nervous irritability seems a prime desideratum, and almost every drug having any reputation for this purpose has been used at one time or another. One thing is clear—namely, that no anodyne drug should be used, except under the stress of some emergency, if it disturbs the digestion or interferes with the nutritive functions or the powers of life. If an anodyne must be used, *codeine* is considered one of the safest. The testimony of many investigators shows that *antipyrine* is one of the drugs upon which most reliance can be placed. Children take it in proportionately larger doses than adults. Beginning with a small dose, it should be increased until a child of two years is taking two or three grains every three hours. In a frebrile state it is never depressant unless some idiosyncrasy exists. In many cases its action is little short of marvelous, but in the majority all we can expect is a decided lessening of the number and severity of the paroxysms. *Belladonna* has been used for years, and is of undoubted service in many instances. It has the advantage of being safe in doses sufficient to produce its constitutional effects, and should be continued throughout the sickness. *Bromoform* has proved of value in the hands of many observers. It may be given in doses of from two to four drops three or four times a day to a child three to six years of age. My own results have not been as favorable with this drug as with *Antipyrine*.

Bromide of Potassium, Sodium or *Ammonium* are considered very serviceable, and may advantageously be combined with antipyrine or belladonna. *Choral* is another drug which is frequently of value, especially for procuring sleep; but we must always bear in mind that it is a cardiac depressant and govern ourselves accordingly. Osler says: "*Quinine* is one of the best remedies. One-sixth of a grain may be given three times a day for each month of age."

(*b*) *Woods & Fitz*, in their new book, say, "that the frequency of the paroxysms and the catarrhal irritation of the mucous membrane may be sensibly modified by the administration of the *emulsion of asafoetida* in very large doses at short intervals."

I never have been able to accomplish much with the preparation, because of its offensive taste and smell. Little treatment is usually required during the catarrhal period. *Alum* has long been a favorite; it is especially useful to check excessive secretion in the later stages, or where the presence of mucus seems to excite the paroxysms. Two grains may be given every three or four hours at two years of age.

If the cough and catarrh are excessive a weak mixture of codeine and tartar emetic may be used very cautiously; one-half grain codeine, one grain of tartar emetic to a goblet of water, a teaspoonful being given every hour or two hours according to the severity of the cough and distress. A child may rarely object to this and the dose is perfectly safe. Sometimes syrup of ipecac and squills may be advantageously added to the above prescription. Local treatments of the throat, larynx, trachea, and nasal passages have been used extensively, but in my own practice I have found this form of medication difficult to carry out with small children, as they are generally frightened by it. The use of atomizers and inhalations of vapors are available and valuable. At the West End Nursery Infant's Hospital, Boston, they use a "Vapo-Cresoline" lamp, which is kept lighted in the room of the patient. The lamp burns a coal tar derivative and is said to work most excellently.

Dr. Harrington, who has lectured on Therapeutics for several years in the Medical Department of Harvard, says: "I taught for years that there was no specific which would check or stop the paroxysms of whooping-cough, but am now convinced there are remedies which act almost as a specific." He has made certain observations to this end, and is confident that Formaldehide fumes will almost completely stop the vomiting and paroxysms. He uses the Paraform tablets, which are largely Formaldehide. One tablet is powerful enough when evaporated to disinfect 35 cubic feet of air. He uses three or four tablets for an ordinary room. He simply permeates the air of the room, not completely disinfecting it; for in the latter case it becomes an irritant and will do more harm than good. He places two or three tablets of Paraform in one-half drachm of Alcohol and lets it evaporate over a gentle heat. In this disease, as in others, the bowels should not be allowed to become constipated, and laxatives may be needed; the best for children being calomel or castor oil.

(*c*) During convalescence the system should be built up as much as possible by the use of Iron, Arsenic, Strychnia and Cod Liver Oil, with nutritious food, good, pure air and change of scene.

To summarize:

1. Isolation and disinfection.
2. Pure air and warm clothing.

3. Keep the patient up to his most perfect standard of vigor by frequent feeding.

4. Palliate by use of Antipyrine, Belladonna and Bromides internally with inhalation of Formaldehide vapor to relieve paroxysms and nervous irritability. Codeine, Tartar, Emetic, Ipecac and Squills for catarrhal condition, and Iron, Arsenic and Strychnine to tone up and strengthen in convalescence.

Pittsfield, Me.

IMPORTANT TIPS.

1. The value of small doses of tincture of aconite frequently repeated in the treatment of amydalitis and in the initial stage of febrile diseases.

2. The value of painting the chest and back with liquor iodi fortis—diluted if necessary with an equal quantity of the tincture—in all cases attended with cough.

3. The value of a pill of exsiccated ferrous sulphate in conjunction with the administration of purgatives in the treatment of anæmia

4. The value of grain doses of gray powder with an equal quantity of Dover's powder from three to six times a day in the treatment of syphilis.

5. The value of large doses of the iodides in the treatment of tertiary syphilis.

6. The value of large doses of bromide of potassium in the treatment of the "heats and flushes" and other symptoms from which women suffer about the time of the menopause.

7. The value of large doses of quinine in the treatment of supraorbital neuralgia, and in the periodical febrile disturbances from which old malarial patients suffer.

8. The value of five grains of butyl-chloral-hydrate with one two-hundredth of a grain of gelsemin in neuralgia of the fifth nerve.

9. The value of small doses of a saturated solution of camphor in alcohol in the treatment of autumnal or choleraic diarrhoea.

10. The value of small doses of perchloride of mercury in the treatment of infantile diarrhœa when the stools are green, slimy and offensive.

11. The value of sulphide of calcium in doses of a tenth of a grain in the treatment of boils, carbuncles and abscesses.

12. The value of nitroglycerin and nitrite of amyl in the treatment of angina pectoris and allied conditions.

13. The value of alcohol in the treatment of fevers.

14. The value of flying blisters in typhoidial conditions.—William Murrell, *Medical Record.*

INTESTINAL ANTISEPSIS.

The causes of the intestinal disorders of infancy are practically always bacteria or their products. It matters not whether the germs be introduced from without or be normal inhabitants of the intestine which have been rendered virulent by an altered environment.

The efforts for the more scientific modification of cow's milk for infant feeding have as one of their objects the proper adaptation of the food to the requirements of the child, without leaving in the digestive tract a useless residue to undergo putrefaction. Although the food be sterilized before administration, if too large a residue be left it is quite conceivable that it may gradually produce such changes in the bacteria which normally inhabit the intestinal canal as to cause them to change their character. That the bacterium coli commune may so change is well known.

In both the prophylactic and causative treatment of the diarrheal disorders of infancy, the principle of antisepsis should always be borne in mind. In a recent paper on Intestinal Antisepsis (*British Medical Journal*. November 4th, 1899) I. Burney Yeo points out the important fact that the medical conception of antisepsis is not absolute as in the surgical; that the scope of intestinal antisepsis is to prevent or neutralize anto-intoxication proceeding from the alimentary canal.

The virulence of organisms may be diminished also by modifying their environment. In order to benefit our patient it is not absolutely necessary to kill the germs.

Yeo considers as ideal antiseptics for the small intestine such substances as are insoluble in the stomach and to some extent volatile, so that their influence may be diffused into the gases in the intestine

Bouchut has shown that the toxicity of the urine varies directly as the amount of putrefaction going on in the intestinal canal, and that such putrefaction can be diminished by the employment of certain intestinal antiseptics. The amount of aromatic sulphates present in the urine, provided aromatic drugs have not been administered, is also a gauge of the putrefactive changes in the intestine. These aromatic sulphates are diminished by irrigation of the colon. Dr. V. Hurley and Dr. F. Goodbody, using aromatic sulphates as a gauge, have found that when putrefaction is increased, calomel in small doses tends to diminish it.

All are now agreed upon the efficacy of irrigation of the colon in infantile diarrhœa. Many employ lavage of the stomach in addition It is satisfactory to know that the correctness of the present methods of treating digestive disorders of infancy is emphasized by the above investigations.

PEDIATRICS.

GENERAL PERITONITIS AND ITS TREATMENT.

The subject of the treatment of general septic peritonitis is always one of interest, although we know that we are almost invariably fighting a losing battle. One of the commonest causes of this as well as other forms of peritonitis is disease of the vermiform appendix, so that we are thus able to speak properly of a form of appendicular inflammation with general peritonitis, characterized by a set of symptoms whose presence almost at once destroys hope in the mind of the surgeon. Cases are reported from time to time, of recoveries from this condition after operation with extensive peritoneal irrigation, usually with surgical salt solution and subsequent free drainage. The method is not entirely satisfactory even when successful, and the results are not always to be accepted without reserve as cured cases of general septic peritonitis, because it is often the case that a very considerable fraction of the peritoneum is not involved at all in the disease, in spite of clinical appearances, and may even have escaped contact with the irrigating fluid used at the operation. One of the most unsatisfactory parts of the question is that concerning safe and efficacious drainage. The rapidity with which peritoneal adhesions form around such a focus of irritation as that caused by a strand of gauze packing is well known, but the effect of this process upon the perviousness of the drain has perhaps not received the attention it deserves. The aim of the operation has always been to remove as much as possible of the inflamatory products by irrigation, and to provide then efficient drainage for a period of at least forty-eight hours. It has been recognized that it is not possible to disinfect the peritoneal cavity, but there has always been hope that the peritoneum would be left in a condition to cope with the remaining infectious matter, and would take care of any new septic products which might be formed. The peritoneum has been trusted to great lengths in this regard by some operations, and in some cases after free irrigation with salt solution and local cleansing of the site of infection, the abdomen filled with hot salt solution has been entirely closed. Successes have been reported after this method, though we hestitate to say in consequence of it, for the question of the actual extent of peritoneum involved is not always easy to settle, though this has an important bearing on the future of the case. If the peritonitis is actually general, the alexic function of the whole peritoneum is practically lost, and we should be justified in thinking that mere dillution of the poison would not prevent its entrance into the circulation. Furthermore, we must remember that by the time a true general peritonitis has developed, the human organism must already have absorbed a considerable quantity of toxins which have begun their harmful work on the nervous centres with great promptness. In cases in which, at the time of operation, although clinically having every evidence of general peritoneal involvement, we find, in consequence of the lack of the customary adhesions, coils of more or less uninvolved intestine, the possibilities of a favorable manifestation of the protecting power of the peritoneum are very considerable, and it is under such circumstances, we think, that most of the so-called cases of general peritonitis are cured.

We must remember that there are several elements in cases of general peritonitis which add to and in fact constitute the basis of the gravity of the disease, besides the condition of the peritoneal membrane itself. There is more to do in fighting this disease than simply to remove the inflammatory products in the peritoneal cavity, and to prevent their reaccumulation. Tympanites from intestinal paresis, with the consequent absorption of toxins from the putrefying intestinal contents, is a very serious element in the disease, dangerous and unsatisfactory to treat. If this condition is well developed, it would be impossible to put any quantity of salt solution into the abdominal cavity and then close the wound. The consensus of opinion at present in regard to the disease under consideration seems to be that it is almost impossible to save a case of general peritonitis, and that our chances of success by what are now commonly accepted methods of treatment are inversely proportional to the extent of peritoneum involved. Surgeons are apparently pretty well agreed that it is best not to resort to general abdominal irrigation, if possible, and that in any case the cleansing of the peritoneum shall first be undertaken carefully and methodically from the point of infection outward. If we can ever have an apparatus to supply hot salt solution continuously, and thus establish the same system that has been used in joints, we might save some otherwise hopeless cases of general peritoneal inflammation; but, until we can, the weight of the evidence seems to be that there must be some provision for drainage.—*N. Y. Medical Record.*

COUNTY HEALTH OFFICERS.

There is much to commend in the following remarks from a lay contemporary.—*The Essex Echo.*

"If the recent smallpox outbreak in North Essex has taught one lesson more than another, it is this, that the time has come for some county legislation on the appointment of a county health officer, district health officers for several districts throughout the county may have been all right in their day, but the time has come for a change. If there had been a county health officer when the first case of smallpox was spotted, no time would have been lost in unsatisfactory consultations among local health officers while the most loathsome disease was, in the meantime, getting in its deadly work. A county health officer would have had the case at once isolated, and in that way have prevented the spread of the disease. Apart from this there are numberless cases where medical health officers could be superseded by an active health officer. We all know that there are a great many menaces to public health in every town and township which require remedy, but which local health boards are afraid to tackle because of their position as business men. Here a non-partizan appointee could be called in by requisition of the parties annoyed by such menace and adjust matters according to the Public Health Act, no one daring to molest him. There is another reason why one medical health officer would be preferable to the present system. At the time of a smallpox outbreak there are no physicians anxious to relinquish their practice to look after those afflicted with the disease—for it would mean attending to that to the exclusion of everything else—as no one would have a physician attend him, who has been in attendance on smallpox. It would be the duty of the county health officer to take charge in an outbreak of this nature while the other doctors would continue on the even tenor of their way, and would see that the county officer did his duty to the letter. It would also give every county an expert in health matters. The expense would be no more than is now paid by the local municipalities. We have never yet heard one medical man object to having one health officer appointed for the county, by the county. Until some such arrangement is made there will always be confusion and dissatisfaction in health matters while the afflicted pay the shot."

THERAPEUTICS.

Anusol.

Anusol (*Medical Review of Reviews*, October, 1899) is a combination of bismuth with iodo-resorcin-sulphonic acid, having a specific action upon the rectal mucosa. It is a powerful disinfectant and deodorant, an efficient desiccant for suppurating or hypersecreting surfaces, and an astringent and granulation-promoting agent. It relieves constipation, hastens the removal of hardened and impacted feces, softens and moistens the excrementitious matters, and causes easy and painless defecation. It has no unpleasant by-effects, contains no narcotic substances, and can be freely used in both sexes, at all ages, and at any time.

Anusol is recommended in catarrhal affections of the rectal mucosa, in proctitis, intestinal tuberculosis, fissure of the anus, local ulcerations, and for the relief of constipation, tenesmus, pruritus ani et vaginæ, prostatic hypertrophy, and all pruriginous and painful conditions of the rectum and adjacent organs.

Anusol is supplied only in the form of suppositories, each containing about ten grains of the drug with zinc oxide, balsam of Peru, and the excipient—one to be introduced every night. This dosage suffices for ordinary cases; severer ones require a suppository night and morning in the beginning.

A New Local Anesthetic Solution.

F. G. Lydston, in a communication to the *New York Medical Record*, vol. liii, says: "I desire to call attention to what promises to be a new departure in genito-urinary surgery. I have used as a substitute for cocaine in a number of cases of urethrotomy a ten per cent solution of antipyrin in a one per cent. solution of carbolic acid. As far as my observations have gone, the solution appears to be quite as efficacious as cocaine. In meatotomies, when, as is well known, the skin incision is usually painful, I have found even less complaint than when cocaine is used.

"The advantages of the agent as compared with cocaine are; (1) Absolute safety; (2) freedom from constitutional effects; (3) distinct lessening of hemorrhage after operation; (4) less disturbance of nutrition of the wounded tissues.

"The solution should be fresh, and should be allowed to remain in the urethra for ten minutes, as a rule. I have, however, begun cutting within five minutes after injecting it. I would suggest the antipyrin solution for nose and throat work. It will at least make a safe foundation for further anesthesia with cocaine. Absorption of the cocaine and hemorrhage will both be inhibited, thus adding greatly to the safety of operations. Unlike that of cocaine, the styptic effect of antipyrin is not followed by vascular relaxation, and often almost uncontrollable hemorrhage."

Electricity in Respiratory and Cardiac Failure.

A. D. Rockwell (*Medical Record*, Nov. 11, 1899) says that direct electrization of the pneumogastric and phrenic nerves calls into activity the physiological function of these nerves. In the case of the former the action of the heart is depressed; in the case of the latter respiration is accelerated and strengthened.

Percutaneous applications in therapeutic doses, especially with the faradic current, altogether fail to affect the pneumogastric appreciably, while the same method readily affects the respiration through the phrenic nerve.

In respiratory failure, therefore, whether due to the poison of opium, aconite, or in apparent death from drowning, electrization is a powerful antidote.

In heart failure from chloroform narcosis also the faradic current is a legitimate method of resuscitation, by keeping up the respiration without depressing the heart.

Stypticin in Uterine Hemorrhage.

Boldt (*N. Y. Med. Woch,*; *Centralbl. f. Gynecol.*, No. 37, p. 1159) reports as follows concerning his experience with stypticin: (1) Favorable results in the menorrhagia of young chlorotic patients were unaccompanied with pathological changes. (2) Same results in menorrhagia multiparum without chlorosis, but showing moderate ovarian hypertrophy. (3) Prompt and reliable effect in postpartum hemorrhage incident upon placental retention and continuing after curettage. (4) Favorable action in the hemorrhage of para-and perimetritis after miscarriage, and (5) after childbirth. (6) No results from its exhibition in cases of postpartum hemorrhage from placental retention and before the womb has been cleaned out, (7) and (8) nor in hemorrhages from myxomatous or carcinomatous tumors. (9) No results in hemorrhagic endometritis unless preceded by curetting. (10) Same in fungoid endometritis. (11) Results were unreliable in hemorrhages of chronic metritis or endometritis, and (12) insufficient in retroflexion with chronic endometritis. (13) Most favorable influence over the hemorrhages incident upon change of life. (14) Those due to puerperal subinvolution. (15) Such hemorrhages which could be ascribed to no definite cause. (16) Hemorrhages due to traumatic peri- and parametritis proved amendable to the exhibition of stypticin.

Quinine Hypodermically.

It has long been a desideratum, says N. S. Lincoln (*Medical Record*, Nov. 18, 1899), in the practice of medicine to procure a solution of quinine which can be administered hypodermically without causing irritation to and blistering of the cuticle. He has for the past two years been using a fifty per cent. solution, dissolved in muriatic acid, which produces no ill effect whatever, and he also finds excellent results from giving the same liquid in capsules. Muriatic acid, being native to the stomach, assimilates more readily than either tartaric or sulphuric acid, and the quinine is dissolved more rapidly and thoroughly than it can be with the

other two acids. He has used this solution (fifty per cent of quinine in muriatic acid) in unusually large doses without any of the uncomfortable results generally attending the use of sulphate of quinine, giving as much as thirty grains in capsules without any resultant headache or ringing in the ears. The quinine acts directly and happily, administered in capsules holding ten grains each. He therefore recommends the formula to the profession used as above stated.

Aspirin.

A new salicylic preparation (acetyl salicylate) has been recently introduced (*Medical Press*, Nov. 8, 1899) under the name of aspirin. It is in the form of crystalline needles, soluble in water at 37° C. at the rate of one per cent. In alcohol, ether, etc., it is about as soluble as other salicylic preparations. The most important distinction between aspirin and other salicylic preparations lies in the fact that it does not irritate the mucous surface of the stomach; further, it splits up so slowly in the gastric juice that it passes out of the stomach undecomposed and undergoes this progress only in the alkaline intestinal juices, the blood, and in the tissue lymphs. It is useful in all diseases in which salicylic acid and sodium salicylate have been employed, especially in gout articular and muscular rheumatism, sciatica, dry pleurisy, etc. An agreeable form of administration is aspirin one grain, sugar three to four grains, stirred round in a little water and taken three or four times a day.

From the advantages it possesses over the crude salicylin preparation, its agreeable slightly acid taste, the absence of noises in the ears, irritation of the stomach when taken, aspirin is likely to come rapidly into favor.

Atropine in Asthma.

Riegel, of Giessen, at the seventy-first meeting Deutscher Naturforscher und Aerzte (*Berl. Klin. Woch.*, Oct. 2, 1899, p. 885), after discussing the various theories advanced to date and bearing upon the pathogenesis of asthma, proceeds to investigate experimental studies upon the role of the peribronchial muscular fibers, which role has but lately been demonstrated. By irritation of the pneumogastric Einthoven succeeded in raising intrathoracic pressure to 120 millimeters water and more. Experimental researches bear out the theory of peribronchial muscular contraction. Asthma is most assuredly a neurosis, and experimental research seems to show that whatever is nature, be it reflex or idiopathic, the stimulus is transmitted along the pneumogastric line. Should this prove true, however, it behooves us to substitute for the treatment of the attack, and in lieu of the usual narcotic preparations, such means as will reduce pneumogastric excitability. Atropine fills this indication, and Riegil suggests its use in hypodermic injections, which he has often found effectually to cut short a threatening attack of Asthma.

Peronin, a New Anesthetic for the Eye.

Quaita (*Settimana, Med.*, Oct. 7, 1899) has upon the eyes of thirty healthy adults used a five-per-cent solution of peronin (chlorhydrate of benzolic ether of morphine). A burning sensation is at first caused,

which lasts but a short time and is soon followed by well marked anesthesia, which lasts for about ten minutes. The diameter or mobility of the pupil, or the accommodation, visual acuity, or eye tension, is is no way affected by this drug. The corneal epithelium was never affected nor infiltrated, as may happen after cocaine. The intense vascular injection with lacrimatous and serous chemosis is the great disadvantage of peronin as an ophthalmic anesthetic. Quaita thinks that it might be more useful than cocaine in enucleation or evisceration of the globe, as it produces deeper anesthesia and the increased vascularity does not matter in this case.

Bromide of Strontium in the Treatment of Epilepsy.

N. Cullinan (*Lancet*, Oct. 7, 1899) says that from his experience in the use of various bromides the preparation of strontium is far more effectual in the treatment of epilepsy than is that with potassium, sodium or ammonium. Its sedative action is well marked, causing but slight, if any, disturbances of the gastric functions, and appearing to act as a tonic to the nervous system generally. It does not impair the mind of the patient or produce anemia; while, on the other hand, the external evidences of improved blood-supply are well marked. On the whole it tends to produce a healthier tone of body and mind. The addition to each dose of the salt of ten grains of borax appears to act beneficially, but has the disadvantage if continued for a time of causing a low form of gastritis with flatulence, which is very distressing to the patient. Otherwise it is a good adjunct to the treatment.

Hydrogen Peroxide in Prussic Acid Poisoning.

Kobert (*Rostocker Aerzte Verein; Munch. Med. Woch.*, No. 28, p. 945) recommends the timely use of hydrogen peroxide in cases of prussic acid poisoning. This treatment, which he discovered several years ago, when employed at the earliest opportunity, has been successfully tried both in England and America, He further recommends its introduction into general use in emergency cases.

Antitoxin in Whooping-Cough.

Gilbert (*Rev. Med. de la Suisse Rom.*, 1899, No. 6; *Berl. Klin. Woch.*, 1899, No. 35) secured in all cases, even in those which had withstood all previous medication, remarkably rapid improvement. Identical results have been obtained by Lotti and also by Cerioli, so the efficiency of antitoxin in whooping-cough is now vouched for by three different authorities.

ELECTROCUTION INSTEAD OF HANGING.

Although this method of capital punishment has not yet been adopted in Great Britain, it is quite possible that it may take the place of the "clumsy hanging" at a future date. The method adopted by the United States authorities in America is well described by Mr. Homer Bennett in the American X ray Journal.

The current used generally is the alternating dynamic, with a tension of 1,700 volts to 2,000, amperage of 7½ amperes, and alternations of 16,000 per minute. In three recorded cases the only external signs after death were slight blisters on the legs of all the executed men, and the hair of the head upon which the wet sponge rested was hot, due in both cases to the heating of the water by the intensity of the current passing through the sponge electrodes.

The condemned person is placed in a chair made of Oak, about 3 feet wide, 2½ feet deep, and from the bottom of the seat to the top of the head is 3½ feet. The seat is made of perforated wood, and there is an adjustible head-rest, as in dental chairs, but in addition the front of the head can be securely fixed by iron bands, so as to make the head absolutely immovable.

The "condemned" is placed in the chair and securely fastened by means of straps and buckles. In addition, a head-piece of soft black calf-skin, diamond-shaped, is placed over the face, having small opening for nose to project The bandage is then fastened to head-piece, securing the head and acting also as a mask.

The contacts are made by means of two electrodes, one of which is applied to the outer side of the right leg at about the junction of the upper and middle third, and is held in place by means of a light strap around the calf. The other electrode is applied to the vertex by means of a long black strap, which is passed round the temples and cheeks and under the chin.

The electrodes are well wetted with a solution of sal ammoniac.

When the current is turned on and the tension is adjusted according to the "physique" of the condemned person, there is a sudden tetanic contraction of every muscle in the body, every strap being strained to breaking point. With the contraction of the diaphragm there is a short spasmodic gasp, purely involuntary, and with this exception not a sound was heard from the executed person.

The current is then turned off, when the muscles, of course, are relaxed, so be again put in spasmodic rigidity, when the current is again passed through the body. This is repeated three times, so as to make sure that death has resulted.

The first shock really ensures death, and the subsequent contractions and relaxations of the muscles were post-mortem, such as are known to follow the application of electricity to dead muscle.

It is to be most sincerely hoped that if capital punishment is not to be abolished, electrocution will supersede the barbarous and un-scientific hanging in all European countries.

New Signs of Death from Drowning.

In the *Review of Medical and Surgical Progress* it is stated that Moreau gives two points which are indicative of death by submersion:— (1) The presence of a clear and limpid liquid in the peritoneal cavity; (2) the presence in the bladder of a large quantity of clear urine, but slightly coloured. There are so many self-evident fallacies in connection with these "tests" that we are not disposed to believe that they will aid medical jurists to accurate verdict in suspicious cases.

Morphia Testing.

In the *Therapist* is given a test for morphia in morphine habitués.

About 20 ounces of urine must be collected from the person suspected of self-drugging by morphia. If it have not an acid reaction, acidulate it with dilute Hydrochloric acid until blue litmus is redened by it. Concentrate to about 3 ounces, and let result stand in a cool place for twelve hours and filter. To filtrate add sufficient sodium carbonate, to render it alkaline, stand for twelve hours, filter and collect precipitate and wash this with distilled water made slightly alkaline with sodium carbonate, and dry. Digest the dried precipitate with pure alcohol at a gentle heat and filter. Evaporate the filter to dryness, dissolve the residue with dilute sulphuric acid and test for morphine by the Iodic-acid test or other usual method. It is asserted that by this means morphine can be obtained from the urine of those who are taking but very small quantities of the drug.

Phosphorus Poisoning.

Dr. Freyberger, Barrister-at-Law, reports in *Treatment* a case of phosphorus poisoning in an infant. It occurred in the practice of Dr. Henry Koplik, of New York, U. S. A. The amount of phosphorus ordered was 1/200 gr. three times a day, and the treatment was carried on for two weeks. Then the child became feverish, and diarrhœa came on, with a petechial eruption on the extremities. The phosphorus was at once discontinued. Hæmorrhage was noted with the stools, also epistaxis. Finally the child died from exhaustion. The phosphorus, Dr. Freyberger states, was given in the form of Oleum Phosphoratum, which, in the United States Pharmecopeia, contains 1 per cent. of phosphorus in oil. The total amount taken was 42 doses, equivalent to 1/20 gr. of phosphorus. Dr. Freyberger concludes his report by declaring against the use of phosphorus in cases treated, as outpatients to whom sufficient doses to last a week are given. He considers it should only be prescribed where the patient can be seen more frequently.

Sterilization of the Skin.

Senger has made a long series of experiments to discover the best method of sterilizing the skin, and has published his results in the *Archiv für Klin. Chir.* The technique he has adopted as the best is as follows, the whole process taking some ten minutes to perform.

(1) Mechanical cleansing with ordinary soap and water just as hot as can be borne (about 104 degrees to 113 degrees Fahr.) This scrubbing should last at least five minutes.

(2) Bathing, or rubbing the hands with alcohol of a strength of from forty to sixty per cent.

(3) Washing for two minutes with a warm two to five per cent. solution of hydrochloric acid.

(4) Washing for one minute with a warm one-half per cent. solution of permanganate of potash.

(5) Washing with sulphurous acid until the skin is decolourised.

Senger insists upon having the solutions warm, claiming that their antiseptic action is much increased by the heat. By this method he was able to obtain sterility in almost every instance in which the skin was tested by scraping. He considers, however, the most accurate test is to embed small snips of the skin in a culture material. By the latter test, he found the skin, prepared by his method was sterile in about seventy-five per cent. of his experiments.

Splenectomy.

Jonnesco has performed the operation of splenectomy twenty-three times since 1896 (*Gazette des Hopitaux*), once for hydatid cyst and twenty-two times for malarial hypertrophy. The patients were between the ages of 12 and 63 respectively. In four cases the general condition was good, in five anæmia was marked, five had marked cachexia, with œdema of the lower extremities, and a large decrease in the number of red corpuscles. One case died as a result of the operation, seven succumbed from complications independent of the spleen condition. The operation always had a curative effect: the cachexia disappeared, red blood corpulses increased, and the malarial intoxication disappeared. The urinary toxic symptoms also always decreased. These excellent operative results confirm Jonnesco in the opinion which he holds in common with Saveran, that the spleen harbours the malarial plasmodium rather than protects the body against malaria. Hence its removal is indicated in malarial subjects when it is enlarged, the operation suppressing the greatest source of infection and curing the patient. The writer advices the operation before adhesions have formed or the cachexia has rendered the subsequent operation more grave. Leukœmia is the sole contra-indication.

Warning Concerning Exploratory Puncture of the Chest in Children.

A most uncomfortable experience is that of finding that one has provoked dangerous effects by the employment of means supposed to be harmless,and, unfortunately it is not an uncommon one. The indiscriminate resort to tapping the chest to clear up a doubtful diagnosis may lead to such an experience, as is graphically set forth by Dr. Henry Koplik in the August number of *Pediatrics*. The warning should prove all the more effective because Dr. Koplik, in common with others, has before dwelt in his writings upon the harmlessness of the procedure. He now relates in brief the histories of four cases in which pulmonary hæmorrhage followed the puncture. Fortunately, the result was not fatal in any of them, but the author points out that the conditions may not always be favourable to a prompt cessation of the bleeding, and adds that if they were not the child would probably die. It is rarely, he thinks, that more than one puncture at a sitting is justifiable. The needle, he says, should not be thrust in more than a third of an inch, it should be withdrawn rapidly (the whole procedure occupying not more than half a minute), its point should not be moved about in quest of fluid, and the puncture should be made cautiously on the left side of the chest either in front or in the back, in the vicinity of the heart and great vessels or near the vertebral column. He states that he himself has never punctured in front over the apex of the lung and over the great vessels.

Fractures of the Patella.

Martin, in the *Archives Medicales Belges*, thus sums up the best methods of treating fractures of the patella:—

(1) For the old and debilitated: simple rest, without the employment of splints for fixation.

(2) For those who can afford to lose time and for those who object to operations: fixation by means of splints.

SOCIETY REPORTS.

St. George's Hall, Elm Street, Jan. 3rd, 1900.

Toronto Clinical Society.

At the fifty-eighth meeting of this Society, Dr. Geo. A. Bingham, the President, occupied the chair.

The following Fellows were present:—Aikins, Peters, Orr, Greig, Oldright, Boyd, Spencer, Ryerson, Fenton, Lehmann, Bruce, McIlwraith, Anderson, McCollum, Thistle, Hamilton, Pepler, Mcdonald, Fotheringam, Parsons, Small, King, Britton, Thorburn, Rudolf, and Elliott.

Red Cross Donation.

It was moved by Dr. J. O. Orr and seconded by Dr. Spencer, that the Society donate $25.00 to the Red Cross Society's funds for use in South Africa. Carried.

Foreign Body in Pelvic Cavity.

Dr. Geo. A. Peters showed a half of a knitting needle which he had removed from a woman's pelvis. The woman had sat on her knitting and the needle had passed through her right buttock, grazing the tuber ischii and entering the pelvis an unknown distance to the patient. At the first examination the needle could not be felt, as the woman was fat. She was sent out of the hospital with instructions to present herself again if it troubled her, and this she did in a week. She was anesthetized and the needle removed through the vagina. It was located on the lateral plane of the pelvis lying against the tuber ischii, the line of the needle grazing the sacro sciatic notch. An incision was made in the vaginal wall, a pair of forceps inserted and the body grasped about the middle and removed.

Syphilis of Cranium.

Dr. Wm. Oldright presented a patient, a man aged 54 years, who in early life had used alcohol pretty freely, and who had contracted syphilis about twenty-five years of age. There were no symptoms of a secondary character, but before the onset of the present trouble had suffered considerably from headache, but beyond that no other symptoms. In November, 1897, he had a fall and cut the scalp, which did not heal well at the time, there being a little eruption upon it. In August, 1898, it

commenced to discharge and the patient came under Dr. Oldright's care, and then there was a considerable narcotic area showing through the scalp, the breach of continuity in the scalp being about three inches in diameter, the bone underneath being corroded and black; and you could see pulsation in the pus from the brain beneath. At the time of the Canadian Medical meeting he was shown to several of the members, and Dr. Bell of Montreal advised operation then, which was done shortly afterwards, the surgeon cutting through both tables of the skull. About two by two and one half inches was removed, and underneath found the dura covered with granulation tissue Since then portions of the bone have been removed without anesthesia, which gives him no pain, although there is an unpleasant sensation in the ears A probe passed posteriorly will pass in about two inches. On putting the finger down through right to the bone, the bone is smooth, but the upper end is diseased corroded bone. In places the necrosis only seems to have extended as far as the upper table. Underneath there is living bleeding bone. But at other places, both tables are eaten through and there is a place where the little finger can be inserted between the dura and the skull. New bone has formed in the granulation tissue. When the bone was first removed it was suggested that a dressing of pepsin and hydrochloric acid be applied, as that might conduce to the digestion of the bone. The patient has had 35 grs. of pot. iod. three times a day. For ten or twelve days this would be continued and then stopped, and during the intervals the bichloride was being administered. At first he only took ten grs. per day.

Dr. Spencer spoke of a similar case in the service of Dr. Grasett at the General some years ago, in which the patient suffered from necrosis of the frontal bone. In this case the necrosed bone was taken away by simply lifting it up with a probe without any other operative measures. Dr. Spencer did not favor the application of bichloride locally, because there are many others that are far better, because they destroyed the smell better. He favored Vichy water as a vehicle for administering the iodide; and thought we should be careful in stating that a case of syphilis was cured.

Dr. Oldright stated that one reason for operating was that pus might burrow between the dura and the skull and set up general infection. He thought it would shorten the course of the disease by removing all the necrosed bone possible. The patient put on flesh under iodide of potash.

Cardiac Aneurism (with notes).

Dr. W. B. Thistle stated that these occur in two varieties, acute and chronic, the acute being more uncommon. The usual situation is near the apex of the heart, and is found with infective endocarditis, and acute softening resulting from chronic thrombosis. The chronic are found with localized myocarditis there being very often a history of syphilis. The great majority of these aneurisms are situated near the apex of the heart, and nearly always in the left ventricle. They are, however, sometimes

found in the upper part of the septum and sometimes found in the auricles. Calcerous degeneration is quite common, and in this specimen it is marked. In one reported case, the aneurism had to be cut through with a saw. The aneurism is partly in the ventricular septum and partly in the auricular It is perhaps two inches in length and one in breadth. It occurred in a woman aged 32 years, married, but had never been pregnant. There was no history of previous illness nor of syphilis, although the husband was drunken and worthless. Brothers and sisters and parents, all healthy and well. When admitted to the hospital after one month's illness, she had weakness, shortness of breath and marked pallor. There were no symptoms directed towards the heart. She was extremely pale with edema beneath the eyes, with rapid but regular pulse. Examination of the heart revealed a double aortic murmur, traceable up into the neck and down along the sternum. Water hammer pulse very distinct and throbbing of the great vessels of the neck. There was also capillury pulsation, very distinctly seen in the patient's finger-nails. The apex was tipped somewhat to the left. There was at the apex later on a systolic murmur traceable to the left, and still later a pre-systolic murmur accompanied by a pronounced thrill. There was enlargement and tenderness of the spleen and later a somewhat distinct pericardial friction sound heard. At the autopsy, pericarditis was found corresponding to the friction sound heard during life. First examination of the urine revealed nothing abnormal in it. Later albumen was present, and still later much albumen to the extent of holf a test tube, and blood and casts in great number. Examination of blood showed diminution of red corpuscles from the marked anemia. Temperature went up each day and then fell with profuse perspiration. Diagnosis was malignant endocarditis. There was nothing showing the case to be embolical. Death occurred from uremic convulsions after seven weeks in the hospital. Autopsy showed this aneurism in connection with the aortic valve. When the clot was turned out it left a smooth wall with a great deal of calcerous deposit about the opening. The nitral valve shows nothing abnormal contrary to expectations. With contraction of the ventricles, the blood would be forced out of the lower portion of the sac, and that would give rise to a murmur which would be synchronous with the ventricular contraction; that would be systolic and would explain the double murmur at the apex.

Endocarditis of the Right Heart.

Dr. Thistle showed a specimen in connection with this case. The case was one of chronic endocarditis occurring in a rheumatic little girl aged 12 years. It is an interesting case because all four valves showed marked changes. There was a very pronounced mitral and just as pronounced tricuspid changes. Then there are distinct vegetations on the aortic valves and on the pulmonary. And particularly interesting when the specimen was recent, there seemed to be a very distinct little tuft on each segment of the pulmonary valve; but they are not so distinct at the present time perhaps through the action of the formalin. Still there are little ragged vegetations to be seen on the pulmonary valve, and that is an extremely rare condition. Some authors say you never get endocarditis affecting the pulmonary valve.

Tubercular Testicle.

Dr. H. A. Bruce exhibited this specimen which he had removed that morning from a young married man of 26 years. The patient had had some enlargement of both testicles for a year. A sinus had existed in the left testicle for four weeks. There was also one on the right side. The left one led to the globus majór, and the right one led to the globus minor of the corresponding testicle. Tubercular diseases was present in both testicles On examination per rectum, the left seminal vesicle was found enlarged. As the young man was recently married and extremely anxious that a portion of one testicle be left, the surgeon removed the left testicle entire, and the cord of the other as far up as the external abdominal ring. The disease had not extended to the body of the testicle; and it was the left seminal vesicle which was diseased, the left testicle was so removed. Later on the remaining portion of the right testicle will have to be removed.

Extraordinary Case of Cancer (with notes.)

Dr. Wm. Britton reported this case. A woman aged 54 years came under his charge for the first time in July last with œdema of the left ankle and a portion of the leg as far as the calf. In the absence of a local cause in the leg, he came to the conclusion there must be pressure higher up, so the patient was examined vaginally per vaginam. A hard tumor was found, nodular, the pelvis almost completely filled, and apparently the uterus and tumor all one. The outline of the uterus could not be made out at all, nor either ovary nor tube. Externally, in the left iliac region the tumor was greater than in the centre or on the right side. There was some irritability of the bladder, but no special difficulty with the rectum. Posterior to the uterus the tumor was very great, and completely blocked up the rectum, although with the finger in the rectum, the tumor could be pressed forward, rendering the intestine patent to a certain amount. There was no enlargement of the liver. Early in September in the hospital, assisted by Dr. Temple, Dr. Britton made an exploratory incision, with the vain hope that it might possibly be a case of multiple fibroid, although he was suspicious of malignancy. The cavity of the uterus was not enlarged to any degree, perhaps one-third larger than normal. The os uteri was up near the anterior vaginal wall The ordinary abdominal incision was made and a great deal of ascitic fluid spouted out. As the omentum was very much thickened and congested, we determined not to proceed any further; it was also slightly rough. There was nothing special to be observed so far as the tumor was concerned except that it filled the pelvis completely and was firmly adherent to the sigmoid flexure. On separating some of the posterior adhesions there was very free oozing, so nothing further was done except to close up the wound. Five days after union was progressing rapidly, when he was notified something was going wrong. Through each stitch hole there was serous fluid oozing, and from the upper part of the wound fluid was escaping. In five days this fluid had increased with marvellous rapidity. It forced the wound apart, and continued flowing for two weeks when it ceased abruptly and the wound went on

and healed by granulation. Four or five times at intervals of one week parcentesis was performed and fluid taken away. The vomiting after anesthesia was extreme and there was a good deal of vomiting at intervals. During the last week vomiting became incessant, of glairy mucus and brownish coffee grounds. Dr. Anderson made an autopsy the day after death. The body was deeply jaundiced; very much emaciated. The omentum was found adherent to the upper portion of the wound. It was very much thickened. It was found that the tumor had nothing whatever to do with the uterus; it arose from the left ovary. The tumor in places was cystic, with here and there large nodules. The whole peritoneum, both parietal and visceral was studded with little elevations about the size of a millet seed, grayish in appearance and friable in structure. Every portion of the peritoneum, including that covering the broad ligaments and the tumor superiorly, was found covered with these elevations. They were most numerous over the stomach and over the mensentery, as well as the colon. The stomach was of the usual size, although there was atrophy of the mucous membrane. The cardiac orifice of the stomach was perfectly normal In front of the pylorus there was a great deal of thickening to the peritoneal covering, and posterior to the pylorus there was a nodule very nearly the size of a walnut, coarse and grayish in structure and hard, and it had all the appearance of scirrhus cancer.

Dr. Anderson, in describing the pathologic conditions present, stated that the tumor was a papillomatous cyst growing from the ovary, and that usually these tumors were bilateral. About 40 per cent. of them took on malignant action—usually a local malignancy due to implantation of papillouratous growths in the peritoneal cavity.

Eclampsia.

Dr. K. McIlwraith related the history of two cases of eclampsia and the treatment with morphine, calomel and salines.

Dr. Pepler deprecated the use of pilocarpine in this condition, and upheld the employment of veratrum viride.

GEORGE ELLIOTT, *Recording Secretary.*

THE CANADA LANCET

A MONTHLY JOURNAL OF MEDICAL AND SURGICAL SCIENCE, CRITICISM AND NEWS.

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EDITORIAL.

THE ANTITOXIN TREATMENT OF DIPHTHERIA.

The efficacy of the antitoxin treatment of diphtheria, according to the statements of those having the widest experience with it, has been so thoroughly established that further discussion of the subject might seem unnecessary. Special scientific commissions appointed by various medical societies to inquire into the matter, dealing with statistics of the results obtained in both hospital and private practice in all parts of the world have reported so overwhelmingly in its favor that there can no longer be doubt as to its therapeutic value. So much is this the case that most journals have for some time refrained from attempting to prove the utility of a method of treatment that is established on as firm a basis as that of vaccination in the prophylaxis of smallpox. There is some danger, however, of this silence being misunderstood as being due to a decline of the enthusiasm with which the antitoxin treatment was first greeted, such a revulsion of feeling as followed the failure of the brilliant promises of Koch's lymph in the treatment of tuberculosis. There has, moreover, of late been some adverse criticism of the remedy which the careless or indifferent might take as sufficient justification for neglecting to use it. It is therefore well for us to confirm our faith by looking to some of the recent statistics in reference to the matter, and we cannot do better than quote from the Archives of Pediatrics a resumè of the report of the committee of the Clinical Society of London on the antitoxin treatment.

The report is made upon 633 consecutive cases (not specially selected), with the necessary requirements that there must be satisfactory evidence of the existence of true diphtheria, and statement of the number of units of antitoxin used.

Of the 633 cases, 124 were fatal, *i.e.*, 19.5 per cent., and if fifteen ases dying within twenty-four hours are excluded the mortality is reduced to 15.6 per cent.

With this result was compared 448 unselected cases not treated with antitoxin, amongst which 150 proved fatal, giving a mortality of 33.4 per cent.

Another non-antitoxin series is also contrasted by picking out in each the cases in which the larynx was affected, when the mortality in the antitoxin series was found to be 23.6 per cent., whereas for the non-antitoxin series it was as high as 66.6 per cent, the most marked diminution in the percentage mortality being during the first four years of life, and similarly where tracheotomy became necessary, a mortality of 71.6 per cent. in the non-antitoxin cases was reduced to 36 per cent. in the antitoxin cases. The report states that this diminution of the mortality after tracheotomy probably constitutes the most direct proof of the efficacy of the remedy.

The report strongly emphasizes the necessity of injecting the serum early, as a steady rise in the mortality is observable with each postponement of the day of injection during the first five days

In drawing attention to the extreme rarity of an extension of the membrane to the larynx after the administration of antitoxin, it also points out that when the administration is performed during the first three days in cases needing tracheotomy, the mortality is as low as 16.1 per cent.

In considering the question of post-diphtheritic paralysis, the report states that it was present in 145 cases, *i.e.*, 22.9 per cent In 110 of these it was only slight (*e.g.*, paresis of the palate and an ocular muscle), and in the thirty-five cases in which it was severe, in thirty-three the injection had taken place between the third and eighth day of the disease, whereas only one severe case was noted out of 112 cases treated on the first and second days.

In the non-antitoxin series the paralysis rate was found to be 10.8 per cent. But as the report states, sixteen cases were included in the 633 on the ground of paralysis occurring, and if these be deducted, the rate falls to 19 per cent. Moreover, it is to be remembered that the duration of life is shown to be markedly prolonged in the antitoxin cases, and the longer the cases survived the heavier was found to be the incidence of the paralysis.

Finally, the mortality from paralysis in the non-antitoxin series was 12 2 per cent., whereas in the 633 treated by antitoxin it was 8.9 per cent.

Of the untoward consequences following the injection of the antitoxin, the report states that there was no evidence of any prejudicial effects on the kidneys, whilst in 34.7 per cent. a rash was noticed, generally either a simple erythema or urticaria, and in the majority of these cases accompanied by pyrexia. Occasionally pyrexia was observed without other signs. The rash, in by far the larger number of instances, appeared on the eighth day, being seldom seen before the sixth and rarely after the eighteenth.

The appearance of the rash was not found to have any relation to the amount of antitoxin injected.

In forty of the cases there was pain in or about the joints, and a very marked increase in the frequency of the supervention of these pains was seen in those which received the largest doses.

No definite conclusion could be drawn as to the advantage of administering the whole of the antitoixn within forty-eight hours of the first injection, or continuing it for a longer period, and it is to be regretted that no mention is made of the number of units which it is advisable to use in different cases. Seeing, however, that even when used in very large doses no serious ill-effects have followed the injection of antitoxin, and that the number of fatal cases is less when antitoxin is used early, it would seem to be well to err on the side of an overdose at the first injection."

DIAGNOSIS OF TUBERCULOSIS OF THE KIDNEY.

Noble and Babcock (The American Gynecological and Obstetrical Journal) call attention to a useful method in the diagnosis of the above disease—catheterization of the ureters, thus obtaining the urine and injecting the sediment into guinea pigs. The urine from a tubercular kidney will infect these animals whereas that free from tubercle bacilli will not. The search for tubercle bacilli in urine by the ordinary microscopic examination of the sediment is always tedious and often uncertain, owing to the liability to overlook the organisms if few in number. Animal inoculation therefore, while necessitating the waiting for a few weeks for the disease to develop, is more certain. Another advantage of catheterization is that, by obtaining the urine from each kidney separately, we are able to learn in which kidney the disease is situated, or if both are affected—a point of importance in regard to both prognosis and surgical treatment.

As the early diagnosis of renal tuberculosis is extremely difficult this method can be highly commended. While not as widely adopted as its importance would warrant, we scarcely think the authors are right in calling it a new method, as it has been used by many doctors for some years. We quite agree with their statement that "while the method requires time and skill sufficient to use the ureteral catheter, if we may judge from the few cases that have been reported, it is the most reliable single precedure yet devised, and pending the development of a better method it seems to deserve a much more extended trial than it has yet received."

The Editorial Staff of the LANCET has been re-organized and the next number will appear under the management of the new staff.

PERSONAL.

Dr. Thomas S. Cullen, formerly a house surgeon in the General Hospital, and afterwards asssistant in Gynaecology, Johns Hopkins Hospital, spent his Christmas holidays with friends in Toronto. Dr Cullen, who is now practising in Baltimore, has in press a treatise on Gynaecological Pathology, which is looked forward to with much interest. From the excellent work he has done on this subject, we are assured of something satisfactory in a department where good literature is exceedingly scarce.

Dr. Wm. Osler, Professor of Medicine, Johns Hopkins University. paid a short visit to Toronto during the Christmas holidays.

Dr. Norman M. Harris and Dr. White, formerly of the house staff of the General Hospital, and now of the numerous colony of Canadians at Johns Hopkins, spent their holidays in Toronto.

Dr. D. M. Anderson (Trinity, '98), surgeon R.M.S. Empress of India, got three weeks' leave of absence, while his ship was in port, to visit friends in Toronto. After completing his contract in June next, Dr. Anderson will go to Europe to spend some time in post-graduate work.

Dr. Ralph Williams (Trinity, '98), and lately house surgeon at Christ Hospital, Jersey City, recently paid a visit to his family in Toronto. Dr. Williams has set up practice in Brooklyn, N.Y.

Dr. W. H. Stephens and Dr. H. R. Smith (Trinity, '99) have been sent as medical missionaries, by the Board of the Canadian Methodist Church, to the interior of China.

Dr. Murray McFarlane, of Carlton street, was married on December 4th to Miss Fredrica P. Walton, niece of Major Pellatt. THE LANCET tenders its congratulations.

Dr. T. G. Devitt (Trinity, '96), a former house surgeon of the General Hospital, who is now practising in Grand Forks, North Dakota, spent his holidays with friends in Ontario. The doctor is now married and prosperous.

Dr. Turnbull and Dr. Agnew, of Clinton, have returned home, after a year's absence doing post-graduate work in Europe.

Dr. P. G. Goldsmith, of Belleville, who has spent the summer at Moorefields and Gray's Inn Road Hospitals, in London, doing special work on the eye, ear, nose and throat, has returned and resumed practice.

Dr. R. M. Mitchell [Trinity, '92), who practiced for a number of years in Dundalk, has gone to the great North-west, opening an office and drug store at Weyburn, Assinaboia.

Dr. Geo. McDowell (Trinity, '92), Dr. J. Crawford (Tor., '94) and Dr. Gilmour (Trinity, '96), all of whom have been successfully seeking their fortunes in the Western States, spent their holidays with friends in Toronto.

Dr Leonard Vaux, of Ottawa (Trinity, '96) and Dr. J. McRae, of Guelph (Tor., '98), two former house surgeons of the General Hospital, go to South Africa with the second Canadian Contingent, the former as surgeon, the latter as a lieutenant in the artillery.

Dr T. C. Irwin (Trinity, '91), Professor of Physiology in Grand Rapids Medical College, spent his holidays with his friends in Creemore. Dr Irwin volunteered his services as surgeon with the second Canadian South African Contingent.

Three more Trinity undergraduates in medicine go with the second Canadian Contingent to South Africa—L. E. W. Irving, '00, as lieutenant in the artillery; S. J. Farrel, '00, as trooper; W. J. Macdonald, '01, as gunner.

Mr. E. G. Rawlinson, '00, who was also accepted in the artillery and had gone to Kingston to join his battery there, met with a painful accident, having his upper jaw fractured by a kick of a horse, thus preventing his going to the front.

Mr. A. H. Anderson, '02, formerly lieutenant in the 25th Battalion, resigned his commission and went as private with the First Contingent.

Mr. Jordan, '00 (Tor.), is a corporal in C Company of the First Contingent.

Mr. Frank Macdonald, '00 (Tor.), goes as gunner in the artillery.

It will thus be seen that the undergraduates in medicine in Toronto have not been slow to hear their country's call and don the kharki in its service.

Dr. G. Sterling Ryerson, Deputy Surgeon-General of the Canadian Militia, and General Secretary of the St. John's Ambulance Association in Canada, goes to South Africa as representative of the Red Cross Society. Dr. Ryerson will look after the medical interests and comforts of the Canadians.

TRINITY MEDICAL COLLEGE ANNUAL DINNER.

The 22nd annual banquet of the faculty and students of Trinity Medical College was held at the Temple Cafe on the evening of Dec. 8th. Among those present were Major-General Hutton, Col. Neilson, Director-General of the Militia Medical Service, Dr. Landerkin; Dr. Roome, President of the College of Physicians and Surgeons of Ontario; Rev. Armstrong Black, Dr. Adam Wright, Surgeon-Major Nattrass, Chancellor Allan, Dr. Britton, Dr. O'Reilly, Dr. Dwyer, Professor McKenzie, besides the members of the faculty, and representatives from sister institutions. The strong military spirit among the students was shown by the splendid reception accorded General Hutton, the guest of the evening. General Hutton spoke at some length of the present war in South Africa, justifying the course of Her Majesty's government in dealing with the Boers. Of even greater interest to the students were his remarks in reference to the proposed establishment of a field hospital and bearer company in Toronto, the members of which are to be recruited from among the undergraduates in the Medical Colleges of the city. He alluded to the responsibilities assumed, and the exacting service required of those joining these units, a step not to be lightly undertaken, but only from a desire to render service in defence of one's country.

In replying to the toast of the Medical Council, Dr. Roome spoke of Dominion Registration. The other toasts were suitably proposed and responded to.

The dinner, which had a distinctly military flavor, was largely attended, and was in every way a successful affair, for which the President, Mr. E. A. Boyd, and the committre, are to be highly congratulated

UNIVERSITY OF TORONTO MEDICAL DINNER.

The Faculty of Medicine of the University of Toronto held its 13th annual dinner in the University gymnasium on the evening of Dec. 7th. The affair was the most elaborate and successful of the many similar functions in the history of the College

The guests of the evening, in addition to the members of the faculty were :—

Dr. Roddick, M. P., (Montreal).
Dr. Landerkin.
Rev. Armstrong Black.
Dr. Wm. Britton.
Dr. Roome, Pres. O. C. P. S.
Dr. Powell, Pres. Dom. Med. Ass'n.
Prin. Caven.
Rev. J. R. Teefy.
Dr, Burwash.
Dr. O'Reilly.
Dr. Geikie.
Dr. Dwyer.
Mr. Walter S. Lee.
W. F. MacLean, (World.
J. J. Foy, M. P. P.
Dr. Willmott.
Jas Brebner.
Dr. Daniel Clark.

The duties of chairman were ably discharged by Mr A. J. Mackenzie B. A., '00, who in a few brief remarks welcomed the guests and introduced the speakers. Mr. E. D. Carder, B. A., '00, made a very efficient secretary.

Attention was given especially to Dr. Landerkin, replying to the toast "Canada," and to Dr. Roddick, who dwelt particularly on the subject of Dominion Registration, the scheme of which he briefly and concisely outlined. He thought, he said in speaking of the condition of the medical profession of Canada, that a mistake had been made in placing the profession under the control of the provinces. This difficulty, however, might be got over, and he thought that perhaps a way might be found for the Dominion Parliament to deal with the subject under the clause of the Constitution which gives the Dominion power over matters concerning the peace, order and good government of Canada. A bill regulating the study of medicine and establishing a Dominion Council would be brought in at the next session of Parliament, and he was happy to say that not a single Medical Board objected to it. The standard of study would be higher than that now prevailing in any Province. The Council would consist of 24 members (three from each province), and would occupy the same position as the Medical Council of Great Britain. The idea was that any medical man with a certificate from this Board, should be entitled to go to the registrar of any province and ask to be registered in that province as a right. The autonomy of the provincial boards would not be interfered with, and they would continue to have full charge of all matters relating to taxation and discipline.

THE USE OF SALINE TRANSFUSION FOR BURNS AND SHOCK.

It is not many years since the employment of ordinary saline solutions, hypodermically or intravenously, was first urged upon the general practitioner by those who had had experience in this line of treatment. Each year that has passed since these early recommendations has served to emphasize the great value of this therapeutic measure, and our columns have again and again contained reports of cases of infectious diseases, of cases of toxemia like puerperal eclampsia, uremia, and diabetic coma, in which excellent results have followed this method of treatment.

In the spring of 1898 the writer of this editorial also called attention to the results which had been obtained by Tommaseli in the treatment of severe burns by hypodermoclysis and intravenous injections. Tommaseli believed from clinical observation and experiment, that a large part of the lethal influence of burns depended upon toxemia, and on putting his belief to the practical test he found that artificial saline injections saved life. So, too, in this country Bardeen, as a result of a histological study of the tissues of several children who had died from burns, came to the conclusion that toxema was an important factor in causing death, and his results indorsed the proposition of Tommaseli in regard to this method of treatment. Even if the toxemic condition is not directly improved by saline injections into the subcutaneous tissues or veins, there is still another one in which this method of treatment may be of great good, in that surgical shock is nearly always present as a result of severe burns and scalds, and we have reasons, both theoretical and practical, for the belief that in shock a condition of profound relaxation of the blood-vessels exists, so that arterial pressure is very low and the vital centers are not properly supplied with blood.

While we know that intravenous injection does not necessarily raise blood pressure, we also know that this method of treatment is capable of readjusting the circulation to such an extent that the evil manifestations of vasomotor paralysis are set aside. It seems to us, therefore, that in treating cases of severe burns or scalds, this method of procedure should not be ignored, but should be actively employed, since it can do no harm, and may do much good.—*Therapeutic Gazette.*

SUBCUTANEOUS ABCESSES IN CONNECTION WITH A BACILLUS IN THE CIRCULATING BLOOD.

BY THOMAS BRADLEY, M. D.

T. P. aged 25 years, Machinist, has been troubled for the past ten years with boils. For the first two or three years these appeared only in the winter and in successive crops. The favorite situation were the arms, thighs, face and neck. Between general eruptions at one or more of these situations, he was never without one or two furnucles at least. After about three years in this condition the time of year seemed to have no influence, eruptions appearing as last discribed at all seasons. This state of affairs continued until two years ago when an eruption covering the whole body made its appearance. At the same time the right fore-arm and arm were swollen to a size nearly half as large again as normal with marked involvement of epitrochlear and axillary glands. The cervical and submaxillary glands were also enlarged. After two months stay in the hospital, he was discharged as cured. Shortly after leaving three boils appeared on the left fore-arm. With little treatment, further than protection, these disappeared but only to be followed by another lot on some other part of the fore-arm or on hands face or neck.

I saw the patient for the first time in December 1898. His left hand was then in a condition of servere celtutitis with a discharge of pus at the base of the proximal phalynx of the little finger. The fore-arm was also much swollen and had two or three points of discharging pus. In most cases these points of breaking down and sloughing were more depressed than the ordinary boil. Others, however, were not unlike the ordinary furunculus beginning in a raised angry looking spot and terminating in gangreue of the central part which was eventually cast off in the form of a slough. For some days before a visitation, the patient complained of an intense heat over the whole body. He was also dull and indisposed to any exertion. This condition alternated with severe headaches. His bowels always but especially at this period were confined. Other than the above, the patient appeared to enjoy fair health, important organs being carefully examined. As regards the urnialysis of which a number were made there was nothing abnormal excepting on one occasion when pus was found. The blood as regards the different counts, viz.;—red, white and differential was also examined and found to be with very slight variations in a normal condition.

Up to within one month before he came to me, he had been steadily under treatment for two years without any but an occasional temporary result. The patient showed me a prescription which his doctor had given him some eighteen months before. The chief ingredients were Iodide of Potash and Bichloride of Mercury. Suspecting a syphilitic taint I again went into his history, especially on this point most carefully, but could find no trace whatsoever. Upon making sure that he had for some time given up treatment as useless, I agreed at his suggestion to do what I could. I put him on Arsenic Strychnine and Calcuim Sulphide. He was also ordered a bath each night followed by a sponging over the whole body with a solution of Carbolic Acid (1 in 60). Un-

derclothes were changed three times a week. Calomel in four grain doses followed by Saline every five days was also ordered. In one week the patient reported that he was feeling much better and that his boils were nearly all gone. He was ordered to continue the same treatment and to report again in another week. Patient returned again in about ten days, but to my disappointment was much the same condition as he was when I saw him first. In fact the hand was much more swollen and more painful, so much so that he was obliged to leave off work for one week. Not being satisfied as to the nature of the trouble I made a culture on blood serum from the pus of one of the abscesses that had not yet been exposed. At the same time I thoroughly cleansed and sterilized a portion of the fore-arm, also my own hands and a needle and innoculated another tribe of blood serum with a specimen of the blood. After twenty-four hours in the thermostal a very free growth was present in both tubes. Cover-glass preparations of the specimen taken from the culture innoculated with the pus showed a mixed growth viz; micrococci and staphlococcus pyogenes aurens and an organism resembling the protens vulgaris. The blood specimen with the exception of a few cocci were identical with the last mentioned variety. The bacilli vary in both length and thickness more especially however in length being sometimes thread-like and apparently interlaced. The last process was repeated and another specimen of blood examined. In one case there was no growth and in the other very slight visible growth and but few organisms in cover-slip preparation. I referred the matter to Dr. Anderson pathologist to Trinity Medical College and he advised more strict Balterio logical tecnique, stating that it was possible that the organism found was a contamination. Acting upon his suggestion a good hypodermic syringe was selected and allowed to remain in a solution of carbolic acid (1 in 10) for ten minutes after which it was boiled in a strong solution of bicarbonate of Soda for forty-five minutes. The patient's fore-arm was prepared by washing with soap and water, carbolic solution, then (1 in 20) and finally with alcohol and ether. Then I thoroughly washed my own hands and sterilized them in carbolic acid (1 in 20). Blood was at once withdrawn by means of the prepared hypodermic syringe from the Median Basilid vein and injected into liquifiied agar and plated at once. After twenty-four hours in the incubator there were innumerable colonies of different shapes and sizes, namely, round branched and braded and on the level or above the surface of the media. Ten different colonies taking as many different forms and as far removed from each other as possible were examined, revealing in each case the same microorganism. Again and under every precaution innoculated slant blood serum with blood in the following order. 2 from 1, 3 from 2 and so on to 4. Each time more liquifaction accurred. No. 1 showed brownish purulent scum, No. 2 slightly liquified and No. 4 thoroughly liquified holding in suspension a whitish floculent material. Each culture media contained the same organism but it became smaller and apparently less abundant at each innoculation. This last condition was exaggerated in a thirty-six hours' compared with a twenty-four hours' growth. Another original agar plate culture was made and examined for colonies

eighteen hours later but there were none present. After twenty-four hours however many of different size and shape were visible. A number were examined under the microscope and as before the same bacillus revealed itself. I also examined a number of colonies after thirty-six and forty-eight hours respectively but only to get the same parasite under slightly different conditions. A number of the specimens of thirty-six hours' growth revealed some of the bacilii as a cellular affair with an apparent nucleus. In thirty-six and forty-eight hours' growth individual bacillus seemed much smaller compared with twenty-four hours' growth. From original agar plate innoculated beef broth and agar slaut. After twenty-four hours' growth in thermostat, beef broth contained comparatively few bacilli but those present, were remarkably well defined. After four days organisms were yet quite distinct and more numerous. The media contained a white flocculent material clinging to the glass at junction with the bouillion. From the same specimen made a hanging drop examination. The bacillus showed four distinct movements and a fifth the existence of which I am not thoroughly satisfied with. The movements are quite rapid much more so, than those of the typhoid bacillus. The organism under certain circumstances vary much in length from rod shape to filaments. The rod-shaped are large and more or less uniform in thickness and length, The filamentous structures have not as yet under examination shown any movements although all other characteristics correpond with the short rod-shaped. In many cases they appear to have transverse markings and in all probability the short in which such active movements are present are subdivisions of the larger variety at these markings. The movements are certainly four and probably five in number. In one case the bacillus moves across the field in a zig-zag manner throwing its body at different angles from right to left thus—— motionless, ⋀ ⋀ moving, —— motionless. At each single movement it propells itself from half to twice the length of itself. Another movement is one in which it partially turns upon itself first to one side and then to the other forming each time the arc of a circle. Althoug it does not travel across the field as rapidly as in the last movement described its movements over the same ground are rapid. It travels after this fashion, — motionless. ⌣ ⌢ ⌣ moving, — motionless. The last distinct movement is one in which the bacillus turns completely upon itself forming what looks like a large coccus. It is after this fashion, —— motionless. o o o o moving, —— motionless. The fourth movement is snake-like. The fifth and doubtful movement appears to be up and down without bacillus quitting its ground. It appears to turn end for end in a regular manner.

A NEW METHOD OF DIAGNOSIS OF TUBERCULOSIS OF THE KIDNEY.

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The diagnosis of tuberculosis of the kidney has been considered sufficiently obscure to cause the average physician to be very doubtful of his abilities in this direction. It has been my experience as a practical surgeon that the cases which have come under my notice have all been so far advanced that the ordinary methods of diagnosis were sufficient for arriving at a conclusion. In all of the cases pain, tumor, hectic fever, pyuria and bladder symptoms have been present to so marked a degree that but little skill has been required to make a diagnosis.

The case reported to-night is of the same character. It is reported in detail, however, because of the employment of a method of diagnosis which has been recommended for cases obscure in character or when seen at an early stage. This consists in securing urine by catheterization of the ureters with sterile catheters, and then injecting the sediment from the urine into guinea pigs. The urine obtained from a tubercular kidney and containing tubercle bacilli will affect guinea pigs, whereas, that free from tubercle bacilli will not. The result of this examination in the particular case reported will be detailed by Dr. Babcock.

While not needed for diagnosis in this case, the result corroborates the claims of Dr. Reynolds of Boston concerning the value of the method, and I shall certainly employ it in future cases in which there is doubt. Tuberculosis of the kidney is not a rare disease, and any method which will add to the certainty of diagnosis of the malady is deserving of our attention. The present tendency is to permit these cases to go on until the patients are in bad general condition, or in *extremis*, before they are brought to the surgeon. It is to stimulate an interest in the subject and to permit an early diagnosis of the malady that this contribution has been made.

Miss E. B., white, aged thirty. There is no history of tuberculosis in her family. Her father died at 53, with heart, liver and kidney disease. The mother is living and well, as are all of the patient's brothers and sisters.

The personal history reveals no ailments except those common to childhood. The patient was admitted to the Kensington Hospital for Women May 23, 1899, having at that time suffered for four months with frequent and painful micturition that had progressively increased in severity. At times there had been right lumbar pain extending to the thigh. The urine at this time was acid, with a specific gravity of 1012, and contained albumin and a very considerable amount of pus.

With the cytoscope the bladder was found to be inflamed, with several small ulcers near the right urethral orifice. This was very patulous, being at least four times the normal diameter. Despite repeated exam-

inations, the left urethral orifice was not found. Under bladder irrigations the vesical symptoms subsided, but the pyuria persisted, until, after nine weeks, the pus formed from one-eighth to one-fifth, by bulk, of the urine. The average quantity passed at this time during twenty-four hours measured fourty-eight ounces.

The course of the fever during the first month under hospital observation was irregular, but the evening rise rarely exceeded 100° F. Then the fever became more marked, with an evening exacerbation that averaged during the fourth, fifth and sixth weeks 101° F., and that increased during the next three weeks to 102° F., and frequently reached 103° and 104° F.

During this time the patient lost weight and strength and had repeated attacks of abdominal pain, particularly in the right renal region.

Urethral catheterization continued unsatisfactory as only the right ureter could be catheterized The urine collected from this ureter was always alkaline, and contained much pus and had a specific gravity as low as 1006.

About the eighth week a large mass became palpable on the right side of the abdomen. A number of microscopical examinations failed to show tubercle bacilli in the urine. It was, therefore, determined to inject the urinary sediment from each kidney into separate guinea pigs. A urethral catheter was accordingly introduced into the right ureter, June 6, 1899, and in sixty minutes about one ounce of purulent urine had collected from this kidney. As it was not possible to catheterize the left uterer, the bladder was irrigated with salt solution. The urine collecting in it from the left uterer was saved. After twenty minutes one and one-ounces were drawn—which doubtless contained a considerable percentage of salt solution. The separate urines were placed in sterile tubes, sealed with cotton stoppers, centrifuged, and placed upon ice. Three guinea pigs, having an average weight of about 500 gms., were taken. About 1.5 cc. of the separate sediments were injected into the abdominal walls of two of the pigs, June 6, 1899. The third animal was not injected, and served as a control. Considerable local reaction, with redness, tenderness and decided swelling occurred at the seats of inoculation and slowly subsided.

The patient's right kidney having in the meantime been removed and found to be extremely disorganized by a tubercular process, the guinea pigs were permitted to live much longer than is usually necessary. Upon September 18 the guinea pig that was injected with urine from the left kidney, having been distinctly ill for some time, was killed. There was an open wound at the seat of inoculation, surrounded by a moderate fibroid induration. The inguinal lymphatics were much enlarged and distended with a thick cheesy material. The cervical, axillary and mediastinal glands were also involved, and there were marked and typical tubercular deposits in the spleen, lungs and liver. Stained preparations from the necrotic foci showed the tubercle bacilli. Upon September 22, the second pig (the one injected with the urine from the right kidney) was killed. This animal, although apparently not in health, did not appear so ill as did the first. A small, granulating wound was present

at the seat of the inoculation. The inguinal glands were not enlarged (the injection having been made rather high over the lower thorax), but the axillary and cervical glands were enlarged. Necrotic collections were found in the anterior medistinal glands, which showed, upon staining, the characteristic bacilli. Tubercles were present in the spleen, and there were also small tubercles in the lungs and liver. The entire process, however, was milder than that occuring in the first pig. The control guinea pig has gained in weight and remains healthy. The guinea pig forms such a delicate reacting medium to the tubercle bacillus that it is not improbable that the tuberculosis of the second pig was produced by bacilli entering the bladder through the right uterer. In using a test of such delicacy it is obvious that the urine from each kidney should be secured whenever possible directly from the ureter or renal pelvis.

The patient's condition becoming such that it was deemed unwise to await the result of the inoculations, upon July 24 a right nephrectomy was performed.

A large suppurating tubercular kidney was removed through a lumbar incision. There were two ureters, one of which was much infiltrated and its lumen filled with pus. The incision was not extended forward in order to perform a complete ureterectomy, because of the general condition of the patient. Gauze drainage was employed because of the diseased condition of the ureteral stump.

The quantity of urine passed during the first twenty-four hours after operation was fourteen ounces. It contained considerable albumen and much pus. During the second twenty-four hours, twenty-three ounces was passed. Gradually the quantity increased until the average daily excretion became from forty to sixty ounces.

The wound suppurated and pus was discharged. On the tenth day after the operation the patient's appetite returned, and her strength increased. All her pain disappeared and she was discharged in good general condition (but with a sinus) at the end of seven weeks. At the present time the sinus is open, discharges some pus and considerable urine. This evidently is discharged from the bladder, regurgitating through the very patulous ureter. The kidney increased 15 cm. in length 6.5 cm. in breadth. The capsule was thickened and adherent, and the renal surface was lobulated. On section the bulk of its substance was found to be replaced by a reddish or yellowish cheesy material. But a single pole retained the appearance of normal kidney structure, and even this was infiltrated with small tubercles.

Action on Rabbitts and Guinea Pigs.

Innoculated a guinea pig subcutaneously. In twenty-four hours its temperature per vagina was 101 1-5°. In forty-eight hours it was a 102° and then was a profuse diarrhora. The animal was very dull and apparently quite ill. The temperature remained between 100° and 102° for six days. After ten days the animal died. The antopsy revealed nothing abnormal further than move than an ordinary amount of fluid in the peritoneal cavity. Bouillion was inoculated with specimens taken from the peritoneal and pleural cavities, also from the liver and heart.

Twenty-four hours growth in the thermostat revealed nothing, either in the appearance of the media or microscopically. On January 13, selected a large and plumb rabbitt. Its temperture per rectum was 99° (considered normal). With due precaution it was inoculated with a growth on bouillion of twenty-four hours by means of a hypodermic syringe. The instruement was filled and its contents injected into the posterior auricular vein. Third day after innoculation temperature was in—

	Morning.	Evening.
	99⅔	101
Sixth day..	102⅔	102⅔
Seventh day	103⅔	104

And much diarrhora.

Eight day..	102	102⅔
Ninth day..	102	102⅔

On February 7th unnoculated subcutaneously into flank the same rabbitt with an ordinary hypodermic syringe full of bouillion culture seventy-two hours old. Twenty-four hours later the animal had profuse diarrhora and a temperature of 103⅔. At the point of infection a semi-solid raised mass about the size of a chestnut was also present. Twenty-four hours after this the rabbitt had still diarrhora and a temperature of 103½°. The swelling was much the same, but rather of an elastic feel. Its temperature was not taken again until February 14th, when it registered 102½. For one month after this, fever fluctuated between 102½° and 100°. Six weeks later it was 99½. The diarrhora had now ceased and there was merely a scab remaining at the point of innoculation. The animal had become markedly reduced before its temperature returned nearly to normal.

Action Toward Different Staining Reagents

It stains by Gram's method and with all the ordinary reagents especially will with gentian violet,

Five months after the first specimen of blood was examined another was examined revealing in every respect precisely the same organism in one case as in the other.

Although publishing the above at the discression of the editor as a mere clinical report, I may say that from the data here given I have not been able, according to "Sternburg," to find a corresponding bacillus under the same conditions and with associated similar symptoms to the organism in question.

The patient came to me to-day (September 2, 1899). He had similar and dissimilar symptoms with those described. The left hand, fore-arm and axillary glands were chiefly involved. The hand was swollen fully double its normal size. In the palm was a hard non-movable mass about half the size of a hen's egg. Over the posterior surface of the fore-arm a large number of abscesses had become confluent leaving a large purulent surface surrounding, which was a deep red discoloration, with much induration of the underlying tissues. An indurated mass was

present at the bend of the elbow, making flexion almost impossible. The axillary glands were more swollen than on any previous occasion. Patent said that at outset of this attack his left arm suddenly became powerless and remained so for two days. (September 25, 1899) Right axilla, arm and fore arm tremendously swollen. Axillary space almost completely filled up, so much so that arm could not hang by side of body. The sensation on palpation was something like graping a base-ball, nodular masses could be felt throughout, Posterior surface of about half of arm and fore-arm were especially swollen of a deep red or purple hue and quite ordematoas.

SYNERGETIC MEDICATION.

"Antikamnia Laxative Tablets" or "Antikamnia & Quinine Laxative Tablets,"—as the condition presented may require,—will compel the excretory organs to perform their natural functions naturally, without griping or stomach sickness, and they are, therefore, the proper remedies for constipation, headaches, chills and fever, malaria, la grippe and allied conditions, coryza, colds, congestions and the general disturbances arising from suppressed action of the various functions of secretion and excretion.

These two new combinations are particularly useful in that torpid condition of the bodily functions, produced by the retention of poisonous ptomaines, scientifically known as autotoxia.

We would especially call attention to the wide use of "Antikamnia & Quinine Laxative Tablets" in chronic or semi-chronic diseases which begin with a severe "cold." Their power to relieve pain, reduce fever, tone up the system and restore natural activity to the bowels, will, we feel sure, make these tablets unusually valuable.

We believe the profession will at once appreciate the uniqueness and usefulness of these combinations.—*The Atlantic Journal—Record of Medicine.*

BOOK REVIEW.

THE MODERN TREATMENT OF FRACTURES.

By John B. Roberts, Professor of Surgery, Philadelphia, and published by D. Appleton & Company, New York.

This little work advances many new ideas in the treatment of fractures that are worthy the careful consideration of every surgeon and practitioner. It is full of good practical ideas. And now when aseptic surgery is beyond doubt any surgeon would be open to censure were he to bind up a broken limb in splints were he not certain of correct coaptation or in cases where the nature of the fracture is such that the fragments cannot be kept in position. We cannot speak too highly of the work.

MUSSER'S MEDICAL DIAGNOSIS.

A Practical Treatise on Medical Diagnosis. For the use of Students and Practitioners. By John H. Musser, M.D., Professor of Clinical Medicine, University of Pennsylvania, Philadelphia. New (3d) edition thoroughly revised. Octavo, 1082 pages, with 253 engravings and 48 full-page colored plates. Just ready. Cloth, $6.00, net; leather, $7.00, net.

This volume may be termed a complete practical guide to the modern science and art of diagnosis. Obviously, successful treatment can only be founded, in the long run on a thorough knowledge of the patient's condition from the presentation of the case through all its stages. To this end Professor Musser trains his readers to observe and appreciate the objective signs of disease and the subjective symptoms complained of, and to apply the various instruments and methods of precision which now quicken the work of the diagnostician and eliminate all doubt.

Under the simplification effected by these modern procedures the necessity for elaborate descriptions or extended lists of minutiæ as guides to differentiation is rapidly disappearing. Formerly, for instance, extensive tables were displayed as a guide to the discrimination between anæmia and chlorosis; now a few moments' examination of the blood decides the nature of the affection and whether iron or arsenic is to be given for its cure. Similarly, bacteriological methods of diagnosis, than which none can be more important, will be found adequately given in this volume.

Hot Flashes.

Our sisters are subject to many inconveniences, and all because they are "sisters," and this one known as above is one of the worst of the lot, though not dangerous. It may be amusing to lookers-on to see some stout lady, while everybody around is comfortable, suddenly seize her fan and vigorously cool herself off, and repeat this operation frequently, but really it is a case of the boys and the frogs. Women have for the most part learned to consider these annoying feelings as something

beyond the reach of art, and so do not frequently seek relief at the hands of the profession, or if they do are not in the way of receiving much comfort. To be told that it is only nature's "way" does add to one's comfort, and that is generally all that is vouchsafed by way of cure or help. Having recently treated two cases with results satisfactory both to my patients and, of course, to myself, will give the method. Tri-bromide tablets (7 grs.) one three times daily, fl. ex. salix nig., fl. ex. cimicifuga, aa ½ oz.; fl. ex. nux. vomica, 2 drams. M. S. 20 drops once in 3 hours. The prescription was based upon the theory that these occurrences were due to irregular nervous action manifesting itself through the vascular system, and the object sought was to allay or control this irregularity. The combination seemed equal to the occasion.

As a rule, I do not believe in repeating specific recipes, for the same conditions may not exist twice in different people, but in this case I have departed from my habit because these phenomena are so similar in most cases that a similar pathologic condition might be inferred.—*Dr. Carrington.*

PRACTICAL DIAGNOSIS: THE USE OF SYMPTOMS IN THE DIAGNOSIS OF DISEASE. Fourth Edition, revised and enlarged by Hobart Amory Hare, M.D., B. Sc. Lea Bros. & Co.

The fact that a fourth edition of this work has been called for within four years is, in itself, a high tribute to its excellence, and shows that it supplies a want acceptably. Practical diagnosis has advanced so rapidly in the past few years, owing to the introduction of improved scientific methods, and the literature on it is scattered through so many voluminous works dealing with different subjects, that a treatise dealing with the subject in a concise form, will be found not only a convenient, but a necessary addition to a medical library.

The author has divided his book into two sections—part I, consisting of 13 chapters, dealing with the manifestations of disease in the various organs, and part II, of nine chapters, dealing with the manifestations of disease by symptoms.

The text is accurate and up-to-date, the plates are many and wel chosen, and the presswork excellent.

TRANSCRIPT OF TITLE AND GENERAL DISCRIPTION.

The Medical News Visiting List for 1900. Weekly (dated, for 30 patients); Monthly (undated for 120 patients per month); Perpetual (undated, for 30 patients weekly per year); and Perpetual (undated, for 60 patients weekly per year). The first three styles contain 32 pages of data and 160 pages of blanks. The 60-patient Perpetual consists of 256 pages of blanks. Each style in one wallet-shaped book, with pocket, pencil and rubber. Seal grain leather, $1.25. Thumb-letter Index, 25 cents extra. Philadelphia and New York; Lea Brothers & Co.

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PRESIDENTAL ADDRESS, TORONTO MEDICAL SOCIETY, OCTOBER, 1899.

D. GILBERT GORDON, M.D.,
Professor of Sanitary Science, Trinity Medical College.

PREVENTIVE MEDICINE.

GENTLEMEN —I again desire to express my appreciation of the honor this Society has done me in electing me as its president, and when I realize that I am occupying this same chair which has been occupied by so many distinguished members of our profession, not only am I deeply grateful for this distinction but I feel oppressed with the weight of my responsibility. While I may fall far short of my predecessors in the results which may follow my labors, I will be behind none in my efforts to make the meetings of this season a success. Before I begin my short paper and before beginning this year's work, I think it a fitting time to refer to the great loss this Society has suffered since we last met, in the death of one of our oldest, most distinguished and most beloved members. The death of Dr. J. E. Graham deprived this Society not only of an active and honored member, but its members of a wise counsellor and faithful friend. We will miss him sadly. We mourn with the bereaved family and I would suggest that now as we meet as a Society for the first time, since our great loss, we would pass a resolution expressing our sympathy for Mrs. Graham and her family and have sent to them a copy of the same.

The members of this Society have often had the privilege of listening to many valuable papers dealing with important and difficult subjects and of hearing many interesting discussions, and of seeing cases both medical and surgical exhibiting not only a keenness in diagnosis, but a skill in treatment and a brilliancy of handiwork which have been to its members valuable sources of information, as well as an incentive to better work.

This evening I have ventured to ask your attention for but a short time to a subject, which, considering the great strides made in this department, has not received from us, I venture to think, the thought it deserves. I refer to the subject of "preventive medicine." In the very early times, even so far back as the days of Moses, the laws laid down (though from the lack of scientific knowledge they were necessarily empirical) for the prevention of infection was most complete, in fact,

wonderfully so. Their laws for the isolation of the infected, quarantine of the suspected and the destruction of infection were admirable indeed. Later on, however, the growth of communities, the density of population, especially the crowding of people into large centres demanded the more perfect regulation of all laws affecting protection from disease.

Now, curative and preventive medicines go hand in hand, or, at least, they should do so. The time is past when a physician can walk into the house of his patient, ask a few questions, look at the tongue, leave a prescription or a bottle of physic and depart. The education of the public is so general that our patients demand of us that we give them the nature of the sickness, the cause or the origin of the same, the most probable source of it, and the best means of preventing its spread or re-occurrence. This will necessitate the physician being familiar with the most likely mode of infection in a particular disease. Should it be due to a micro-organism, the life history of it should be known, the special disinfectant to which it is most susceptible, and all laws for protection against it. In order to prevent the spread of a disease we must have a thorough understanding of its causation. The causitive factors are numerous, different in nature and degree. We know well that all do not become tuberculous to whose systems the tubercle bacillus gains access. This exciting cause requires other causes to increase the disease-producing power of the micro organism, and to diminish the resisting power of the patient. These exciting and predisposing causes must work together and therefore to prevent disease they must both be warred against. The influence for example of occupation on the prevalence of disease is striking. This is seen in all mortality tables. For example; from one:

(1) Giving the comparative mortality of men between 25 and 60, I take the following:

Gardeners	108
Agricultural Laborers	126
File Makers	300
Printers	193
Scissors Makers	229
Clergymen, Priests and Ministers	100
Lawyers	152
Physicians	202

(2) From another table giving the average age at death of men in different occupations, I quote:

Farmers etc	65.29
Ship Carpenters	58.53
Coopers	59.22
Glass Cutters	43.16
Telegraphers, male	28.80
" female	24.43
Clergy	58.57
Lawyers	56.45
Doctors	54.99

The crowding together of people has perhaps more to do with sickness and death than any one cause. The increase in the death rate and in the prevalence of disease is in every case, without exception, as far as I can learn, in direct proportion to the increase of the population. From

an English time-table giving statistics in districts apart from London, I quote as follows:

(1)	Where the population to one square mile was	166	the death rate was	16.75
(2)	"	"	"	379	"	21.88
(3)	"	"	"	4,449	"	28.03
(3)	"	"	"	65,623	"	38.62

From a Glasgow table I take the following:

Death rate in 100,000, living in 1 or 2 rooms, 3 and 4 rooms, 4 and 5 rooms.

Zymotic disease	478	246	114
Acute lung disease including Consumption	985	689	308
Nervous and diseases of nutrition in children	480	235	91

The chemical and physical exciting causes of disease I will not refer to, for they do not concern us quite so directly in the consideration of prevention. That other division of exciting causes, namely the vital causes, I will consider a little more fully. Our attention should be directed, first, to the particular micro-organism which caused the disease, the most common channel of entrance into the human body, the means by which it can be prevented, or the means by which the individual may gain an immunity against it. We must, also, consider if that immunity is a real protection, and also if it is at all lasting. Some of the articles written of late on this subject, would lead us to believe that the pendulum has been swinging too far, in attributing so large a portion to the bacterial causation of disease, and in the value of inoculation against it.

It would be well to remember that many of the bacteria are our friends rather than our enemies. By their influence CO_2 is produced for the growth of plants. They are therefore necessary for agriculture.

We are also indebted to them for the production of many of the organic acids. But what concerns us most is the rôle many of them play in the production of disease. Diseases which depend for their existence on the presence of bacteria in the tissue are known as infectious diseases.

In general use, infectious and contagious are synonymous, although correctly speaking, a contagious disease is one transmitted from one individual to another by direct contact, while the term infectious is broader. Here the morbific agent gains access to the body in some more roundabout way, through such means as water, food or soil. It will almost be necessary therefore that there should be in this latter case a predisposing cause. Typhoid fever, therefore, would be an infectious, non-contagious disease. Erysipelas, tuberculosis, and pneumonia, usually non-contagious, might be contagious. Smallpox, measles, and scarlet fever, are notably contagious. Successful prophylaxis, therefore, against any particular disease would necessitate a knowledge of the morbific agent causing the disease, its means of dissemination and the disinfectant to which it is especially susceptible. For example, in typhoid, the milk and water supplies should be thoroughly guarded, sick-room infection should be carefully prevented. For example, the thorough and separate disinfection of the bed linen, towels or napkins, or any garments coming into contact with the patient. An exclusive set of eating utensils should be

used by the patient, and the prohibition of the nurse from doing other work, at least, without the most careful disinfection of her hands.

In this connection a summary of the cause of typhoid in 206 cases given by Herbert Peck, Medical Health Officer of Chesterfield is interesting:

SUMMARY OF CASES.

Soil infection	9 cases	equal to	4.37 of the whole.
Drain effluvia	21 "	"	10.20 " "
Pollution of watercourse	9 "	"	4.37 " "
Manure	6 "	"	2.91 " "
Water	1 case	"	0.50 " "
Importation	25 cases	"	12.13 " "
Sick-room infection	28 "	"	13.50 " "
Several possible causes	69 "	"	33.50 " "
No ascertainable cause	38 "	"	18.44 " "
Total	206 cases.		

I think a good deal more than we do, could be done in the prevention of disease by enforcing more rigidly prophylactic measures in such diseases as tuberculousis typhoid and pneumonia. If this be true in these diseases it is equally true with the venereal diseases. The sooner the profession wakes up to the fact that a person infected with a venereal disease is a menace to society the better for the community. Why should not a person so infected be a subject for State control as much as a person infected with typhoid? Is it because he is not likely to do the same amount of evil, or is the evil not so far reaching? The appaling sequellae, especially in women, the result of gonorrhael infection; the awful consequences of syphylitic infection would have stirred up medical men to do more to lessen these scourges except that they have been opposed by interests so many and so diverse.

Do we thoroughly appreciate the importance of syphylis as an etiological factor in disease. Alfred W. Campbell of the Rainhill Asylum in the *British Medical* of last month shows clearly that syphylis is the cause of general paralysis. He speaks of general paralysis as one of the terrible scourges of England, and declares it would disappear if syphylis could be stamped out. Gowers and Erb make similar statements concerning tabes dorsalis. What part of the body does not suffer in this way? The mortality among children born of syphylitic parents is very high. Of children born of syphylitic fathers 38 per cent die, while if both are infected, 78 per cent. die. From 30 per cent. to 40 per cent. of syphylitic women abort. It may not be possible to deal with venereal diseases as with other infectious diseases, but something should be done to protect, not only the guilty, but the many mothers and children whose lives are blighted, more by this disease than by all other infectious diseases put together. Can nothing be done by us except by the license and inspection system? If so, then let us have that, for one thing is certain that while the contagious disease Act was in operation in England between the years 1864 and 1883, the amount of syphylis was markedly diminished. But since the repeal of this Act in 1884, syphylis reverted, in the army at least, in its original severity and extent to what it was before the Act was passed. It seems to me that much could be done by

us by prophylaxis and isolation in these cases as well as by firmness in prevention of marriage in syphlitic patients.

Nature has provided the animal body with means of protecting itself, the micro-organism of disease are no doubt combated by some opposing force. Some antitoxine in the blood serum. An army of phagocytes, perhaps, or probably by agencies we know nothing of. The artificial induction of this resistance or in other words, the procuring of an induced immunity has opened to medical science the door of a well-filled store house. In 1898 Jenerer produced immunity against smallpox. In 1880, Pasteur did the same with chicken cholera. About the same time Pasteur and Koch showed that animals treated with an attenuated culture of the authrax bacillus, Not only did not take the disease in its virulent forms but were afterwards immune to the disease. So progress has been made. Virulent organisms have been treated under conditions unfavorable to their growth and development, and cultures have thus been produced which render a protection against the disease. So it is possible to increase the antitoxic value of the blood in susceptible animals to a greater extent than that found in an acquired immunity. So were worked out our antitoxic serums which we, at least, may dare to hope may be of use as immunizers as well as healers. The great advantage of course of an immunity gained in this way is that the protection is immediate. The protective material being simply transferred from one animal to another. How long this protection can be made to last in the person receiving it, we cannot now say. Just what this protecting agent is we cannot say. Nature generates it, places it where it can be used, namely, in the blood. And thus may man by its use prevent what nature is making preparations to cure. The field widens before us. If an immunity can be acquired by a mother, what can she do to transmit it? Certainly she can transmit to her unborn child immunity against smallpox. Can that immunity be transmitted without actually giving the disease. In support of that theory I would point out that the tendency in specific diseases is to is diminution of their virulency. Is there in sight an antituberculine which will render mankind immune to this scourge. This wholesale production of a natural immunity can as yet give only the satisfaction we gain from castle building and that disinfection has done much and is doing much to prevent the spread of disease we all believe, but one cannot help wondering if a great deal of the benefit is not gained by the cleanliness necessarily produced rather than the destruction of the dreaded and much abused microbe I think we have come to that point where we may consider if there has not been and is not still a great deal of most valuable energy wasted in the war against microbes, just because they are microbes. Is there a chance of their being our friends as often as our enemies. We wonder if the attempts of the surgeon of to-day will not furnish amusement to the surgeon of to-morrow as he scrubs and scalds and stains and soaks his own hands and the body of his patient in the vain attempt to free them from all these dreaded microbes. Are microbes as guilty as we believe in the causation of disease, or are they rather the result of disease, as Bantock has recently claimed. If so their removal will not prevent disease. The remarkable paragraph with which

this distinguished surgeon concluded a paper read before the British gynaecological society in March last was certainly not in line with modern scientific teaching. It read as follows, and with it I am sure few of us will agree.

"I claim, then, to have shown that the poisons of variola, vaccinia, and syphilis are not and cannot be the product of a bacillus; that Loeffler's bacillus is not a constant, and therefore cannot be the essential, element for the production of an attack of diphtheria; that the essential element in the case of gonorrhoea is not the gonococcus; that the essential element in the case of typhoid fever is not the bacillus typhosus; that the bacillus cannot live but a few hours in ordinary sewage; that not a single specimen of this bacillus has ever been discovered in sewer air, and hence that typhoid fever cannot be attributed to it, because of its contained germs; that, in the cases of the epidemics at Maidstone and King's Lynn there exists no proof of the contamination of the water by typhoidal matter, as indicated by the presence of the bacillus typhosus; that there is no evidence worthy of the name that tuberculosis is due to the ravages of the tubercle bacillus; that the comma bacillus cannot be regarded as the essential element in the production of an attack of cholera, and that the same can be said of the plague and its special bacillus; that the so-called pathogenic micro-organisms are constantly found under conditions consistent with perfect health, and that in more than one notable instance they not only appear to, but actually do, exert a beneficent influence.

"All these things—which are facts, not opinions, capable of demonstration and proof—go to show that the modern doctrine of bacteriology is a gigantic mistake; that we are already at the parting of the ways, and that it is safe to predict that, ere long, it will come to be recognized that these various bacilli play a beneficent *role* in the economy of Nature."

The wonderful strides made in this department of Medicine in the last two years fill us with wonder and admiration, Full well we know that the truth so eagerly sought will eventually be found, and no soldiers ever lived who will idolize and revere more the general who led them to a score of victories, than will we of the Medical profession, even though serving, perhaps, among the most humble of the rank and file, our noble leaders, who in the van of the fight are giving their mighty intellect, their fortunes and their lives in the great struggle, and none ever followed or will follow with more pride, a Napoleon or a Nelson, a Buller or a Dewey, than will we a Pasteur or a Haffkine, a Koch or a Behring as in the fight against the grim monster year after year they add victory to victory.

An ointment of sixty grains of oleate of tin to one ounce of ointment of rose water is an elegant and efficient application to the finger nails when brittle or marked with spots and ridges.

A CASE OF MALE PSEUDO HERMAPHRODITISM.

BY ERNEST HALL, M.D.,
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The occurence of abnormalites of the genital organs, especially that condition commonly know as hermaphroditism, is of sufficient frequency to warrant our attention being occasionally directed to this subject. The additional, far-reaching social, and legal questions involved, give exceptional interest to this matter, and demand the careful attention of the practitioner. As to the frequency of such malformation it is very difficult to state, as comparatively few cases have been reported. but the conditions under which these cases are occasionally found would lead us to conclude that the abnormality is more frequent than the reports would have us believe.

True hermaphroditism implies the presence of the essential organs of generation of both sexes in the same individual. It does not exist to the extent of enabling a human being to perform the complete functions of both sexes, although an apparently rudimentary ovary and testicle have been found in the same body.

Pseudo-hermaphroditism is of two varieties: male, which I shall describe. and female. The latter is a deformity of the vulvae simulating the male organs: the clitoris is enlarged and the labia united resembling the scrotum; the ovaries may have descended into the labia, thus giving greater resemblance to a scrotum in which there is complete hypospadias with fissure of urethra and scrotum, and undecended testes. "Transverse hermaphroditism" is also described in which the external organs are male and the internal female.

Although the majority of hermaphrodites are males they are usually considered as females, and receive the training and education of girls, mistake only being discovered at puberty. Dr. Cushing says this condition is of sufficient frequency to make the examination of the infant with a view to determine the sex, a very important matter. It is not easy to distinguish between a hypospadiac male, and a female infant: the little cleft penis may easily pass for a large clitoris, the position of the urethra, the appearance of the labia minora and majora are identical, as the testicles in hypospadiacs usually do not descend into the split scrotum until late in life. In those cases also there may be an opening simulating a vagina. It must not be forgotten, however, that the vagina may be absent in females. In short there are cases where the diagnosis can only be made post-mortem.

The following cases are cited:—

Homan's case was one of an apparently female individual, who was such on one side and male on the other. He lived in sexual relations for twenty years as a woman and when menstruation ceased at about forty decided that he was a man, married a woman and was still living at date of writing in such relation.

Professor Main-Salin cites a case of a girl, so-called, of twenty-three. It was not until she complained of amenorrheoa that an examination was insisted on. The result showed that she had strong masculine character-

istics, strong growth of beard on chin and cheeks; masculine, heavy voice, no developed mammal, pads being used to simulate female figure; small pelvis and well defined lips, absence of knee convergence usual in females. The genitals closely resembled female organs, but no vagina could be detected, and an examination per rectum revealed neither uterus, ovaries, nor rudiments of either. All the male organs, except the prostate were easily located. The labia majora covered with hair, revealed on palpation the presence of an egg-shaped body the size of a walnut in each, which was the testis with the epididymus. The clitoris closely resembled a penis, covered with freely moving skin, and save the glans, was capable of erection and elongation, with downward curves. In every feature the case was masculine save the long hair. The man complained of strange feelings with great difficulty suppressed. A complete change of dress was ordered which resulted in contentment, with the full appearance and habits of a man.

Professor Pozzi of Paris speaks of two cases. In one a man twenty-seven years old clothed as a woman. While standing the organs resembled those of a male; testicles descended into the labia: upon reclining they retired and gave female resemblance. The penis was two inches long and the prepuce divided. Sexual desire for females existed, but when attempted, only imperfect copulation occurred, and semen contained no spermatozoa. There was never any menstruation.

In case two, a young woman, nineteen years of age was suffering from gonorrhoea and syphilis. She had a perfect hymen, but no vagina nor ovaries, although the breasts developed and other bodily changes occurred at puberty. She never menstruated.

*Matthews reports a case of pseudo-male hermaphroditism. At the age of twelve he removed a testis from a supposed girl, being just below the external abdominal ring, under the skin of the left thigh. At nineteen she was tall, slim and pale. The external genitals were those of a normal female. The face and pubes were free from hair. The vagina was one and three-fourths of an inch long. No trace existed of uterus or prostate gland, nor any trace of another testis.

The following case recently came under my observation:—

Miss O. P., age 14, a healthy looking and apparently well developed child, was brought to my office by her mother for examination of her throat, as for some months she had complained of hoarseness. Interlaryngeal examination revealed nothing abnormal; nares and pharnyx also normal. I was unable to account for her peculiar hoarseness of tone and requested her to call again, On the next visit the mother stated she was ruptured and had worn a truss for some time, and expressed a desire for medical treatment, On asking patient to stand, and placing the hand over the pubic region, I found a distinct bulging over both inguinal canals, with decided impulse upon coughing. On this hasty and imperfect examination I diagnosed hernia, probably ovarian, into the canal of Nuck and sent her to the hospital for operation. I did not see the patient again until she was brought into the operating room, when we discovered

*(Medical Record, vol 55, No. 21.)

the following conditions: pubes slightly covered with hair, both canals open and containing round bodies the size of an almond, freely movable Labia majora were fully developed, and clitoris enormously hypertrophied with well formed glans, which was continuous with labia minorae. A slight groove with elevations on either side was continuous from the franum for three-quarters of an inch to the meatus urinarius which was well formed and normal in appearance; directly below this was the opening of the vagina with well formed carnunculae. The vagina was but an inch and one half deep, ending in a blind cul-de-sac. Upon the examination of the pelvis, neither uterus, tubes nor ovaries could be determined. The body was of the masculine type, the thighs alone bearing some resemblance to the female; hands were large but the feet small; breast undeveloped.

We were now confronted with the question which rarely falls to our lot to decide, that of determining future sex of an individual. I called for her mother to consult with her but she had left the hospital. Nature had evidently given to this individual a preponderence of the masculine. We had before us a complete case of hypospadias, with complete division of the urethra and scrotum; but having been reared and educated as a girl the question was whether to perpetuate the mistake which had already been made, or to disturb the domestic and social relations upon anatomical grounds. After brief consultation with physicians present, it was decided since it was practically impossible to obtain functionable male organs, that social and domestic conditions be allowed precedence. I therefore opened the canal on either side and removed the testicles, and treated as in an ordinary case of hernia; the clitoris was not disturbed. Three weeks later, with the full consent of her mother who had also entirely agreed with the result of our previous consultation, I removed the clitoris and united the upper part of labia minora giving the parts a distinctly feminine appearance. When the child was born the mother noticed an irregularity in the parts and called the attention of the attending physician, but upon his assurance that everthing was normal, she gave it no further thought. At the age of four years, according to the mother's account, the child became ruptured, and the family physician was called who administered chloroform and reduced it. For several years the hernia gave the patient much trouble frequently coming down several times a day. The mother had detected no peculiarity in the child with regard to her preference for either sex, but when brought face to face with the facts said she could not be bothered with 'fellows.'

The questions which naturally arises from the recital of this case are: (1) that of embryological development (2) the influence upon the organism of the early removal of the testicles (3) the proper management of such cases.

The first question I will very briefly discuss, and the third question—that of treatment — I shall leave an open question for the discussion of members of this society, reserving my opinion until a later period.

Regarding the Embryological Development.

At about the end of the fifth week of embryonic life a small opening may be seen externally which receives the termination of the

intestinal canal, the ureters and the different ducts of the sexual organs. At the beginning of the eleventh week the dual aperture is separated from that of the genito-urinary canal by the development of a transverse band. The genito-urinary canal is likewise separated by a similar process of division into a urinary and a genital part, the former of which becomes the urinary bladder. At the external opening of this canal is soon observed two folds of skin, the rudiments of the labia majoria in the female, and the two valves of the scrotum in the male. Between and in front of these an erectile body appears surmounted by a gland, and furrowed along its under surface. This body in the female is retracted into the genito-urinary canal and becomes the clitoris, while the margins of the furrow are converted into the labia minora.

In the male this sinus is nearly closed in at a very early period by adhesion of the two folds of integument which bound it, forming the upper part of the urethra. The erectile body increases and becomes the penis, while the margins of the furrow at its under surface unite to form the spongy portion of the urethra.

The condition of hypospadias arises from incompleteness of the closure of the edges of the original furrow. The so called vagina is the enclosed urogenital sinus.

The Proper Treatment of Such Cases.

Admitting that this case was essentially male, we must not overlook the bearing that education and society have upon determining the place of this individual.. Incapacitated from the complete functions of either sex and possibly unable to exhibit even to a limited degree the primary office of either, the position is somewhat unique. Where the condition is detected very early there can be no question as to the course to pursue, but when a mistake has been made and the child has grown to maturity the nominal alteration of sex is a matter of no little mome nt. In this case where the education and environment had been that of the female, it would have meant social chaos, and ridicule, or the removal to a distant part where the family would be unknown. As the latter was impossible we had to decide between a perpetuation and intensification of the mistake or social ostracism.

The question of means of livelihood also has a bearing here. How could the individual best provide for necessities? Is the economic problem more complicated upon the male side or upon the female? Probably the latter, but as this was a matter of the future it did not have a direct bearing upon the case, as at that time the patient would be able to determine and select the sex, and act accordingly.

We might have replaced the testicles within the abdominal cavity instead of removing them. This would only have given atrophied organs and the difference between absence of glands and atrophied glands cannot be very great. Or we could have with difficulty closed the inguinal canal behind the testes and brought them further down, and freed the clitoris, and afterwards attempted a plastic operation for restortaion of urethra. The girl, we call her now, since there are no testicles, is intelligent and ambitious, and as she has a desire for teaching will be educated with that end in view. If male characteristics develop con-

spicuously she can easily find congenial employment in the placer regions to the north.

I am not prepared to say that a mistake was not made in the treatment of this case.

ASTHMA.

Symptoms.

Sidney Martin* states that spasmodic asthma, whether primary or secondary, is a disease essentially due to some nervous change. Its partial heredity, its occurrence largely in "neurotic" subjects, its occurrence in families subject to migraine, as well as the characteristic attacks of the disease, bring it into relation with nerve-storms, such as epilepsy. The typical uncomplicated asthmatic attack as is seen in children and in some adults, is sudden in its onset, and occurs in the early hours of the morning, between 2 and 4 a.m. It is characterized by intense dyspnœa, in which the patient is unable to assume the recumbent position, but is obliged to hold on to a chair or the bed-railing firmly in order to get purchase for the accessory muscles of respiration. The shoulders are raised and both the natural and the accessory muscles of respiration are contracting vigorously, although the chest moves but little in expansion The dusky face shows the embarassment of the circulation and the deficient oxygenation of the blood: the sweating skin shows the great muscular exertion. as well as the effect of deficient oxygenation of the blood. The lungs are, as a rule, actually enlarged during the paroxyism, but auscultation shows that little or no air is entering into them. The respiratory murmur is absent or whistling, and sonorous rhonchi alone are heard. The attack lasts a variable time and may be over by morning, or it may last for twenty-four hours or longer. After the attack expulsion of mucus from the lungs occurs, but there is no continued cough or expectoration.

Etiology.

Kissell† had five cases of asthma in childhood under his care in the Olga Children's Hospital, Moscow. The ages of the children varied between 9 and 10 years. There was a strong neurotic family history history in most of the cases. The attacks of asthma occurred only in the winter months. They usually began with a copious expectoration of mucus, and rhonchi could be heard all over the chest during a paroxysm. There was no sign of rickets or any malformation of the chest-wall. All the viscera appeared to be normal, and between the attacks the children appeared to be perfectly well. Kissel maintains that true nervous asthma exists in children as well as in adults but it is rare.

In the various children's hospitals, among 21,528 patients there were found 6 cases of asthma; among 214,712 out-patients there were 7 cases.

Samuel Gee‡ says that in asthma there is no doubt that the chest is in a state of inspiratory distension, dilated to its utmost capacity and fixed in this position. But it is more likely that this state of things is

*Gaillard's Med. Journ., Mar., '99.
†Archiv f. Kinderheilk., vol. xxiv, Parts III and IV, '98.
‡Brit. Med. Journ., Mar. 25, '99.

due not to the inspiratory spasm, but to expiratory debility. Air is imprisoned in the lungs, and no amount of forced expiration can empty them. If the sufferer could empty his lungs, he could fill them again; it is the deflation which is at fault, and the extreme inflation is due to incessant forced inspiratory efforts to make the most of what little room for fresh air can be provided by forced expiration. Contraction of the bronchial muscular fibres or of the respiratory muscles, if it play any part in the asthmatic paroxysm, may doubtless be due to irritation of appropriate nerves, but the muscular contraction itself has not been proved to occur, and this must be done before we need discuss its causes. The influence exerted by the nervous system upon secretion, nutrition, and the blood-supply is well known as a general fact, but any particular application of this fact to explain the pathology of asthma is at present beyond our power. Thus, we have no evidence to show that asthma takes its origin from the nerves or brain.

The doctrine of a spasmodic asthma is very imperfectly supported by facts, but we are led to believe that all asthma is merely a peculiar form of bronchitis, and that there is no need for any hypothesis of spasm in order to explain the phenomena of the disease. Which element of the catarrh, defluxion or swelling, obstructs the tubes is a question which naturally rises. The interesting observations of Lefèvre, published more than 60 years ago, upon the expectoration of peculiar mucus cylinders, which he compared to cooked vermicelli, toward the end of an asthmatic attack render it very probable that both secretion and swelling concur to obstruct the bronchia. But there remains another and much deeper question which concerns the asthmatic tendency; in what does it consist? Why are some persons prone to asthmatic catarrh and others not? Why does the disposition run in families? What is the bond which in so many cases connects the several diatheses of asthma, eczema and gout?

Von Leyden* considers that the bronchitis found in so many asthma cases is not specific, and that the disease is not necessarily primary in the lungs, but is a reflex neurosis, the *primium movens* of which may be situated almost anywhere in the body. While asthma is almost always accompanied by a fibrinous bronchiolitis, fibrinous bronchiolitis may be, and often is, uncomplicated by asthmatic attacks.

Frankel† relates the case of a man with arthritis urica, emphysema, and chronic bronchitis, who suffered from severe attacks of asthma, in one of which he finally died. Post-mortem examination disclosed the presence of an extremely severe desquamative catarrh of the small bronchi. The collections of epithelial cells were so great as to fill the lumen of the bronchi completely, acting like tight corks. Hence it is personally believed that, in at least a large number of cases of asthma, whatever change may take place subsequently to obstruction of the bronchi, the epithelial cells are first lost. He suggests that the force of the nervous spasm of the bronchi may be capable of loosening the epithelial cells, and he thinks a nervous element present in practically all cases.

*Med. News, June 25, '98.
†Zeit. f. klin. Med. B. 35, H. 5, 6, '98.

L. H. Watson* thinks there is little doubt that asthma represents the effect of uric acid on the circulation in the thorax, and that it is paroxysmal for the same reason that epilepsy and migraine are paroxysmal, in accordance with the natural fluctuation of the uric acid, and the amount of that substance passing through the blood. Possibly not all cases of asthma are caused by uric acid, but almost all cases are benefited by attention to the elimination of uric acid, and many cases are absolutely cured when the proper methods are adopted and certain dietary plans are accepted which shall prevent its accumulation. There is no doubt also that uricacidæmia, when it contracts the arterioles will certainly suspend gastro-intestinal digestion and absorption, and allow putrefactive processes to take place, which shall furnish toxins that will find their way into the circulation, and thus, again, act as irritants while producing high arterial tension. An asthmatic attack represents the thoracic effect of this tension. Two confirmatory facts would seem to favor Haig's hypothesis: the first is that most attacks of asthma occur at from 2 to 4 o'clock in the morning, when the uric acid flood is at its height, and the other is that after an attack of asthma, as after a uric-acid storm, there is a flow, of limpid, pale urine in great abundance.

J. Pawinskit states that there exists a particular form of asthma due to auto-intoxication resulting from the chronic retention of urine. At times there may be present cordiac symptoms resembling those of cardiac asthma, which may be accompanied by sensations of pain in the præcordial region. At other times the respiration assumes a Cheyne-Stokes character. Or there may be present a purely subjective dyspnœa. Whatever character, however, the respiratory troubles of the vesical origin assume, they never assume a type of a bronchial asthma. They never yield to narcotic or cardiac remedies, but disappear, or at least diminish greatly, if care be taken to empty the bladder.

Treatment.

As a result of the clinical observations, Talma‡ has reached the following conclusions:—

1. The spasm of the respiratory passages may be produced voluntarily by the majority of the asthmatic patients and by many normal persons. 2. Almost all asthmatics can control the spasms even during an attack, but certainly during the periods of remission. 3. The muscles of the respiratory passages are either under the control of the will or may be brought under such control.

As a consequence of these conclusions the importance of respiratory gymnastics for asthmatic patients is patent. The number of respirations per minute must be reduced and expirations performed slower and more completely. The spasm of the muscles will thus be controlled. The speech must be regulated, and while speaking the patient must inspire slowly and deeply. The asthmatic must learn to maintain the proper tension of the muscles of the neck, chest and abdomen.

*Southern Med. Rec., Feb., '99.
†Sem. Med., xxii, p. 142.
‡ Berl. klin. Woch., No. 52, '98.

In four cases of asthma A. de Miranda* employed compression of pneumogastric nerve at the surface of the neck. The compression was accomplished by means of a finger, and yielded relief within a few minutes, even to complete disappearance of the attacks of dyspnœa.

J. C. Thorowgood† says in cases of asthma with overdistended emphysematous lungs and dilated heart, the capilliary vessels are gorged with venous blood, the extremities blue and cold, and the discomfort of the patient is very great. The treatment should be directed to the relief of the circulation and with this purpose in view a course of mercurial pills, Carlsbad salt, and hot water every morning is directed, with tincture of digitalis.

Kingscote's‡ methods of treatment in cases of asthma combined with cardiac dilatation consists in a modification of the Schott treatment with the inhalation twice daily of free oxygen-gas. The gas seems to relieve the paroxysms by supplying the oxygen of which the system is in need.

Boucheron§ states that, if the opinion of Landouzy—that true asthmatics not infrequently have an element of tuberculosis—is well founded, there is reason to think that other toxins also may promote the asthmatic symptom-complex, and especially the streptoccic toxin. Hence an explanation of the cure of asthma in certain cases by antistreptococci serum.

Otto Frese‖ has used iodipin (iodine addition product of sesame oil, containing 10 per cent. of iodine) in thirteen cases of asthmatic affections. Two to three spoonfuls were administered daily. Iodipin possesses special advantages over the iodides ordinarily employed. It never affects the stomach, while it causes at times very desirable peristalsis of the intestines. Toxic symptoms were never observed to follow the exhibition of the preparation in the doses given, and even coryza was only once met with, and that transitorily. A further advantage possessed by iodipin is its sustained effective action, this being continued for some time even after the use of the remedy had been suspended.

S. Solis-Cohen¶ has sucessfully used the following formula in asthma:

℞ Morphine sulph., $\frac{1}{8}$ to $\frac{1}{4}$ grain.
Strychnine sulph., $\frac{1}{60}$ to $\frac{1}{40}$ grain.
Hyoscine hydrobrom., $\frac{1}{200}$ grain.
M. Sig.: Give hypodermically at bed-time.

Sidney Martin,* in uncomplicated asthma, relies upon sedatives, such as the hypodermic injection of morphine ($\frac{1}{4}$ grain), the administration of chloral, or the inhalation of chloroform, to shorten the attack. The inhalation of the fumes of burning nitre-paper or specially-prepared powders, or of cigarettes, gives relief in many cases. The powders used at the Brompton Hospital contain 1 part each of anise and nitre, 2 parts of stramonium-leaves, and 5 grains of tobacco to the ounce; 1 teaspoonful is

* Sem. Méd., xviii., p. 110.
† Brit. Med. Jour., Jund 18, '98.
‡ Med. News, May 21, '98.
§ Tribune Méd., May 4, '98.
‖ Münch. med. Woch., xlvi., p. 213.
¶ Med. Rec., Apr. 30,'98.
* Gaillard's Med. Jour., Mar., '99.

to be burnt on a plate and the fumes inhaled. A pill containing ¼ grain of morphine, with $\frac{1}{75}$ grain of atropine sulphate, given at bed-time, is sometimes useful. Extract of stramonium ($\frac{1}{18}$ grain) may be substituted for the atropine. The use, however, of sedatives, such as morphine and chloral, and of inhalations, constitutes no treatment of the disease, and must be limited as much as possible, especially in the uncomplicated form of asthma, while efforts are made to benefit the general condition of the patient. Of remedies which may be continuously administered to patients who have frequently recurring attacks, two are most constantly used, namely: iodide of potassium and arsenic. The iodide may be most conveniently given with stramonium, as in the mixture which consists of ¼ grain of extract of stramonium, 2 grains of extract of licorice, 3 grains of iodide of potassium, and 5 minums of chloral ether. This mixture may be given two or three times daily in cases of asthma. It possesses two disadvantages, however. The stramonium leads, in some cases, to paralysis of accommodation, but by diminishing the dose the patient soon ceases to experience discomfort from the remedy. If given alone, the iodide must be administered in 5-grain doses two or three times daily, the medicine being stopped from time to time. Arsenic by itself in doses of 3 minims of the liquor arsenicalis is a useful remedy for continuous administration in asthma, and it may be combined with iodide of potassium (3 to 5 grains) in a mixture. The insufflation of a solution of bicarbonate and chloride of sodium, if there is much nasal secretion, is frequently of service, and the application of cocaine in such cases to the nasal mucous membrane helps to relieve the attacks. In children with large tonsils or adenoids, in whom asthma supervenes, the surgical treatment of the local condition, although it may be necessary, does not of itself cure the asthmatic attacks, which may persist for months after the fauces and pharynx have been successfully treated. The removal of a nasal polypus may greatly relieve the attacks, but not a few cases persist after removal. The regulation of the diet of asthmatic patients is of great importance. Meals ought to consist only of digestible food, and that in moderate quantity, no heavy late meals being allowed. Remedies such as alkalies after meals given with the view of correcting the indigestion, combined with a proper diet, give great relief to cases of peptic asthma. Although the asthmatic ought to be careful as regards the food taken, it is wrong treatment to starve such a patient: only harm can come of it, inasmuch as the best chance of the patient's recovering is an improvement of his general health, and this cannot occur without a sufficiency of food. Cod-liver oil often causes great improvement.

Goldschmidt* divides the treatment of asthma into (1) purely medicinal, (2) the physical, and (3) the inhalation treatment. Morphine is of great value in some cases, especially where the attacks are infrequent, but pronounced. If morphine is not well borne, then chloral may be used in a dose of 30 grains, to be repeated in doses of 7½ grains every quarter of an hour until sleep is induced. More than 7½ grains should not be given in this way. In cases of prolonged asthma with expectoration, iodides combined with expectorants and opium are often useful. Amyl-hydrate

* Brit. Med. Jour., Jan. 7, '99.

also acts extremely well, but sulphonal and trional are useless. Occasionally antipyrine and quinine may be useful. In cases where expectoration is abundant, iodides may not only be useless, but harmful. The compressed-air cabinet is useful in some of the sequelæ of asthma, but not in the actual acute attack, which may be made worse by it. Hydrotherapeutic treatment succeeds in some cases of asthma. The patient should gradually be accustomed to colder baths of short duration with douches. Even when catarrhal symptoms are present the body may be vigorously sponged with water at 62° F. Warm drinks should be given at the same time. In case of an acute attack or an exacerbation the treatment is commenced with stramonium fumigation. If this fails, strong stimulation of the skin with hot water should be tried, and, if these measures have previously proved ineffective, morphine or chloral should be given.

In asthma S. Français* requires the patient to first sit down or take any instinctive position that suggests itself. The air of the room should be fresh and yet not cold enough to expose the patient. The room should be as light as possible. Hot foot-baths or sinapisms to the feet should be started; hot applications to the hands also. Then fumigations should be practised, at first steam, later medicaments. The most efficacious of the powders or papers are stramonium, prepared from the leaves, and potassium-nitrate papers, 12-per-cent solution in porous paper, and then thoroughly dried. Cigarettes consisting of the following herbs may be smoked:

℞ Belladonna-leaves, 5 grains.
Stramonium-leaves, 2½ grains.
Phellandrium-leaves, 1 grain.
Extract of opium, ¼ grain.
Cherry-laurel water, to flavor.

If these cigarettes are made with nitre-paper, the value is enhanced. Solanine in capsules of 1 grain each, taking three at half-hour intervals, is recommended. Pyridina, when inhaled, has a prompt sedative action. A few drops on a cloth usually suffice.

H. Rosahnsky† has successfully used the following prescriptions for about fifteen years in asthma and spasmodic affections:

℞ Tr. lobelia inflata,
Æther. sulphuric.,
Liq. ammon. acetat., of each, 2 drachms.
M. Sig.: 15 or 20 drops every half-hour in water.

At night in asthma the following is very good:

℞ Camphor, ½ grain.
Pulv. Dover's, 6 grains.
Sacch. lact., 10 grains.
M ft. pulv. d. t. b. No. 4.
Sig.: One powder at night.

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* Arch. Gén. de Méd., Jan., p. 1, '99

† West. Med. Review, Jan. 16, '99.

B. Van Sweringen* calls attention to a line of treatment in a very obstinate case of bronchial asthma, which was attended by remarkable results. The attack had lasted for two weeks, during which time all the antispasmodics had in turn been exhausted, and the patient had secured but a period of two hours' freedom at any one time. Finally, based on the theory that if asthma was reflex it must be under the control of Setchenow's inhibitory centre, and that anything which would stimulate the inhibitory centre would lessen the reflex-spasm, quinine and strychnine were at once exhibited, and with excellent results. The dose of the quinine was 7 grains. The extract of nux vomica was given in ¾-grain doses, and to this was added ¼ grain of sulphate of codeine. In the interval the iodides were continued.—*Monthly Cyclopædia of Practical Medicine.*

THE TREATMENT OF DIPHTHERIA.

Being assured that even to-day there are many men of undoubted learning and experience in the profession who do not believe in, or are doubting Thomas's as to the efficacy of antitoxin in the treatment of diphtheria, we think that the perusal of the following article from the *British Medical Journal* may convert some, or at least persuade them to give a fair trial to this now well proven remedy. What are the chief causes of failure in the hands of the few of a remedy which has proved a grand success in those of the majority? Simply summed up—too late administration; too small doses, and two few injections. Taking for granted that the strength is uniform, Dr. Turner says he has given 12,000 units in some cases without any symptoms but favorable ones. Our experience has not been so large, but 4,000 units in 24 hours we believe can be given to a child, say four years of age, without fear, but with expectation of good results. We do not mean that this is to be continued long, but that for one or two days if the case should demand this quantity.

THE TREATMENT OF DIPHTHERIA.†

By A. Jefferis Turner, M.D., Lond.,

Honorary Physician to the Hospital for Sick Children, Brisbane.

In the year 1891 a new era in the treatment of diphtheria was introduced by a remarkable series of investigations published by Professor Behring, now of Marburg University. Although, as Behring remarks, all the essential points in the antitoxin treatment of diphtheria had been by that time fully worked out in the laboratory, the subject did not at first attract very much attention. It was not until 1894, when the acquisition of serum from large animals, particularly horses, permitted the extension of the methods discovered in the pathological laboratory to the treatment

* Indiana Med. Jour., Mar., '99.

† Read in the Section of Medicine of the Intercolonial Medical Congress, held in Brisbane.

of human beings that general interest was aroused. The treatment rapidly spread, and by the commencement of 1895 was on its trial throughout the whole civilized world. In the five years that have since elapsed the diminution in the hospital mortality of diphtheria has been nothing short of marvellous to all but the few who had made themselves acquainted with the thorough and unimpeachable experimental basis on which the new treatment had been established. The records of hospital experience have in this instance been in complete accord with the conclusions of the laboratory. In private practice also, in Australia at least, antitoxin has been very widely used with very gratifying results in the reduction of the mortality from this disease. Nevertheless, its use is not yet universal, and it is every now and then our sad experience to see children admitted into the hospital dying from diphtheria, to whom an injection of serum has never been administered, although they have been under medical treatment In England this appears to be the case to a larger extent. One reads with astonishment that the reduction of the diphtheria mortality in London is almost entirely confined to cases treated in hospital, and that it appears very doubtful whether antitoxin is much used in general practice. Though the contrary statement is true in these colonies, I believe that the remedy, even by practitioners of repute, is not always administered in sufficient doses. In mild and early cases a small dose of 600 to 1,000 units is sufficient, but in advanced and desperate conditions many practitioners are satisfied with injecting 1,000 or 1,500 units, when 4,000, 6,000, or even 8,000 or more units are really needed. The treatment of diphtheria appears to be, therefore, still a proper subject for discussion, and I shall endeavour in the first place to lay before you as briefly as possible the facts on which my opinions are based.

The records of the Brisbane Children's Hospital have been very carefully kept for the past ten years, and the majority of the diphtheria cases during that time have come under my personal observation. I am, therefore, in a position to guarantee the similarity and continuity of the statistical material.

During the preantitoxin period of five and a half years the diagnosis was based solely on clinical observation. Doubtless a few cases not really diphtherial were included, and these would make the mortality appear lower than it really was. I do not think they made much difference in the totals.

The antitoxin period is divided into five sections, of which the results of the two first have been already published.[2] In them we have included no cases but such as were verified by bacteriological examination. The new treatment being on its trial, such a course seemed advisable. During the next two sections we have included only cases which were verified bacteriologically, or which on clinical grounds could be recognized as diphtheria beyond any reasonable doubt. In the last period we have had to rely on clinical evidence alone,[3] but this has been interpreted with great strictness, much greater than in the preantitoxin period. In the absence of bacteriological examination the diagnosis of early and mild cases must often be doubtful, but in the severer cases, including the laryngeal cases, I am convinced that no appreciable fallacy has been introduced. All cases of possibly catarrhal laryngitis have been excluded.

The first division of the antitoxin period may be regarded as to some extent transitional. We used a serum of unknown but certainly very low antitoxin strength, of which 23 c.cm. was usually injected. In the second division the same serum was mainly used in doses up to 100 c.cm., and much better results were obtained. Since then we have used a serum of known antitoxin strength, and severe cases have usually received 4,000 units. Latterly, we have increased this dose in some cases to 6,000, 8,000, or even 12,000 units, and we believe that the lowered mortality of the last division is partly attributable to this increase.

The following table gives the total mortality for both preantitoxin and antitoxin periods:

Cases of Diphtheria treated in the Children's Hospital, Brisbane.

Preantitoxin Period.	Admissions	Deaths.	Mortality.
			Per cent.
July, 1889, to June, 1891 (2 years)	73	34	46.6
July, 1891, to June, 1893 (2 years)	114	48	42.1
July, 1893, to January, 1895 (18 months)...	116	46	39.7
Total	303	128	42.2

Antitoxin Period.	Admissions.	Deaths.	Mortality.
Small doses :—			Per cent.
January, 1895, to November, 1895 (11 months)	40	10	25.0
Large doses :—			
November, 1895, to September, 1896 (19 months)	43	5	11.6
September, 1896, to December, 1897 (15 months)	83	8	9.8
January to December, 1898 (12 months)..	45	7	15.6
January to August, 1899 (8 months)	106	10	9.4
Total	317	40	12.6

In presenting these statistics, I must not omit to acknowledge my indebtedness to the hospital residents, L. N. Ashworth, M.B., B.S., Melb., T. E. Green, M.B., B.S., Melb., Hugh Bell, F.R.C.S., Eng., and P. Dixon, M.B., Ch.M., Sydney, to whose assiduous care the good results are greatly attributable, and but for whose careful records I should be unable to write the present paper.

Although the whole number of cases is small as compared with other statistics that have been published, they have the advantage of having been treated in the same institution and under the same personal observation. Their lesson appears clear enough, but it is necessary, in order

to exclude any possible doubt, to consider objections that have been raised by various critics to other similar statistics.

It has been objected that the introduction of a new treatment is accompained by greater attention to the cases, and more care on the part of the residents and nursing staff. As far as our hospital is concerned, I can testify that the greatest possible pains were taken over these cases during the preantitoxin period. It will be shown presently that nearly half of the cases were so severe as to necessitate intubation or tracheotomy, and, allowing for this, the results obtained compared favourably with other institutions at the same date.

Again it has been urged that the introduction of bacteriological methods of diagnosis has led to the inclusion of mild cases which would not formerly have been recognized as diphtheria, and so caused an apparent reduction of mortality. This certainly does not apply to our present figures. Cases not recognizable clinically as diphtheria, but in which diphtheria bacilli are present, have occurred with us very rarely; we have only record of three such cases (which came under observation in 1897), and these cases have been omitted from our statistics.

Lastly, it is asserted that the type of the disease has changed, and that as a whole it is of a milder character than formerly. For this assertion there is no foundation, in fact it is a pure assumption, which can be satisfactorily met. Some observers have attempted to meet it by classifying their cases as mild, severe, very severe, and so on. This is hardly satisfactory, as the classification depends too much on the individual opinion of the observer. There is, I think, a better way. All are agreed that diphtheria affecting the larynx is a serious disease. By including all cases with a distinct laryngeal stridor[4] it is possible to draw a sharp objective line including a large proportion of the cases, which may be known as laryngeal cases. These cases are always serious, and among them the mortality used to be very high. It has now been reduced more than two-thirds, as is shown by the following table:

Laryngeal Cases.

Preantitoxin Period.	Cases.	Deaths.	Mortality
			Per Cent.
July, 1891, to January, 1895*	147	87	59.2
Antitoxin Period.			
Small doses:			
January, 1895, to November, 1895	22	9	40.9
Large doses:			
November, 1895, to September, 1896	30	4	13 3
September, 1896, to December, 1897	37	7	18.9
January to December, 1898	20	6	30.0
January to August, 1899	68	7	10.3
Total	177	33	18.6

*Record incomplete before July, 1891.

In the preantitoxin period very few cases recovered without operative interference, only about one case out of twelve. Now, although we never fail to intubate a laryngeal case as soon as it appears necessary, nearly half the cases recover without interference. No doubt with earlier treatment the proportion would be larger, for many of the hospital cases require operative interference immediately or very soon after admission.

Laryngeal Cases.

Preantitoxin Period.	Cases.	Recovered without Operation.	Proportion.
			Per Cent.
July, 1891, to January, 1895	147	12	8.4
Antitoxin Period.			
Small doses :			
January, 1895, to November, 1895	22	3	13.5
Large doses :			
November, 1895, to September, 1896	30	12	40.0
September, 1896, to December, 1897	37	12	32.2
January to December, 1898	20	8	40.0
January to August, 1899	68	33	48.5
Total	177	68	38.4

Operative interference is still necessary in more than one-half of the hospital cases. In private practice it should be much less frequently necessary. But even in hospital cases requiring operation the mortality has been reduced from nearly two-thirds to about one-fourth of the cases operated on.

I regard the total results obtained in these laryngeal cases as of the greatest value, inasmuch as they deal with a sharply-defined group of cases of a very grave form of diphtheria, and are not liable to erroneous diagnosis in any appreciable proportion so long as cases of possible catarrhal laryngitis are excluded, as we have been careful to do. They are furthermore fairly comparable with the hospital returns of laryngeal cases in other parts of the world, which the total admissions are not, for these are affected by the proportion of a mild tonsillar cases admitted. The total results may be conveniently stated as follows:—Of 100 cases of diphtheria with affection of the larynx treated in the hospital in the preantitoxin period, eight recovered without operative interference, thirty-three recovered after either intubation or tracheotomy, and fifty-nine died. Of 100 similar cases treated with antitoxin in sufficiently large doses, as many as forty now recover without operative interference, another forty-five after operation, and only fifteen die.

Operation Cases (Intubation or Tracheotomy or Both).

Preantitoxin Period.	Operation Cases.	Deaths.	Mortality
			Per Cent.
July 1889, to June, 1891 (2 years)	42	28	67.7
July, 1891. to June, 1895 (2 years)	60	41	68.3
July, 1893, to January, 1895 (18 months)	64	40	62.5
Total	166	109	65.7
Antitoxin Period.			
Small doses :			
January, 1895, to November, 1895 (11 months)	19	9	47.4
Large doses :			
November, 1895, to September, 1896, (15 mos.)	18	4	22.2
September, 1896, to December, 1897, (15 mos.)	25	7	28.0
January to December, 1898 (12 months)	12	4	33.3
January to August, 1899 (8 months)	35	7	20.0
Total	109	31	28.4

The next table shows the difference in the mortality of all the diphtheria cases admitted under the old and new methods of treatment at each year of life.

Mortality of all Cases of Diphtheria at each Year of Life before and after the Introduction of Antitoxin.

Age Last Birthday.	Preantitoxin Period.			Antitoxin Period.		
	Cases.	Deaths.	Mortality.	Cases.	Deaths.	Mortality.
			Per Cent.			Per Cent.
Under 1 year	11	9	81.8	7	2	28.6
1 year	44	32	72.7	35	10	28.6
2 years	56	37	48.2	48	10	20.8
3 "	44	49	43.1	44	6	13.6
4 "	53	14	26 4	47	3	6.0
5 "	38	9	23.7	54	4	7.4
6 "	23	10	38.6	42	4	8.2
7 "	16	5	38.5	19	1	8.2
8 "	6	1	16.7	8	..	0.0
9 "	7	..	16.7	6	..	0.0
10 "	..	.	16.7	5	..	0 0
11 "	1	1	16.7	2	..	0.0
12 "	3	..	16 7	..	..	0 0
13 "	1	1	16.7	..	..	0 0
Total	303	128	42.2	317	40	12.6

The decrease in mortality is striking at all ages, and is particularly well marked during the first two years of life, which had under old methods of treatment such a fearful death-rate.

To these statistics I might add others equally convincing from Australia, from America, from France, from Germany, from England. If hospital records can prove anything, the controversy regarding the efficacy of antitoxin in the treatment of diphtheria may be regarded as closed. But it yet remains to consider in what way the remedy should be used to obtain the best possible results in reducing the mortality of the disease. It will clear the way to the understanding of this problem if we consider it very briefly from the standpoint of recent pathology.

Diphtheria is known to be caused by a bacillus which secrets a powerful toxin. The local irritation produces a fibrinous exudation which forms the diphtheritic membrane, and the diphtheria bacilli are confined to this membrane and the fluid discharged from it. The inflammatory processes have a tendency to spread locally, especially into the air passages. In this way the toxic organism may reach the lungs, but it does not invade the other organs of the body, which contain no more than a few stray individuals, of no practical importance, who may happen to be washed there by the blood current. Apart from the mechanical obstruction of the breathing all the danger of the disease results from the absorption of diphtheria toxin from the local focus of disease. The antitoxin contained in the serum derived from artifically-immunised horses has no direct effect on the diphtheria bacilli, but neutralises the toxin produced by them. This it does by some form of chemical action, neutralising the toxin in a test tube in strictly equivalent proportions, the two behaving in this respect exactly like an acid and an alkali. As a matter of experience it is found that when their toxin is thus neutralised the diphtheria bacilli in the local lesions become harmless: they are dealt with by the tissues as ordinary saprophytic bacteria, and the case so treated makes a speedy recovery to the normal condition. When mixed in a test tube the proportion of antitoxin required to neutralise many times the lethal dose of toxin is very small. When the two are injected into an animal simultaneously or with only a short interval, the proportion is somewhat larger, but still remains small; for antitoxin and toxin behave to each other in the blood stream as they do in the test tube. But if a multiple of the lethal dose of toxin be injected twenty-four hours or more before the antitoxin, the proportion of the latter required to save life becomes enormously increased, and a thousandfold the dose sufficient in the former instance may now be inadequate. The explanation of this is that the toxin is no longer wholly contained in the blood stream. It has entered into some kind of combination with those tissue cells which it particularly affects. In the case of tetanus, for example, a minute dose of antitoxin may be sufficient if injected simultaneously, while the largest possible dose may be insufficient when the toxin has attached itself to the substance of the cerebro-spinal motor cells. That it does so attach itself is shown by the fact that if the toxin is mixed with an emulsion of cerebro-spinal tissue in sufficient proportion before injection, it becomes harmless. In tetanus, the combination once formed

is unfortunately very stable, but in the case of the diphtheria toxin it appears that by maintaining a very high degree of antitoxin strength in the blood, the toxin may be neutralised even after it has fixed itself in the tissues. But to do this, very large doses are necessary, and the longer the interval allowed before their use, the larger must they be.

Applying these considerations to practice, we should, in the first place, inject our remedy as early as possible, as soon as we have made our diagnosis, and frequently in doubtful cases before a positive diagnosis is possible. In very early cases an ordinary dose of from 600 to 1,000 units is quite enough. The course of the disease is rapidly arrested and convalescence is speedy and complete. But it is quite different with cases of long duration, presenting extensive membrane, extending, it may be, into the nose or larynx, or in cases showing symptoms of toxæmia. In these, the patient, in spite of appearances in some cases, is in a condition of imminent peril. The toxin is already fixed in his tissues, and death from implication of the central nervous system, heart, or kidneys will very likely occur. We may now be too late to avert the fatal result, but fortunately we may often do so by using very large and, if necessary, repeated doses. In a really bad case of this description I should administer from 6,000 units at once, and perhaps inject an additional 2,000 or 3,000 units or more within the next twenty-four or forty-eight hours. No time must be lost in producing a high degree of antitoxin strength in the patient's blood. According to my experience, about twenty-four or sometimes forty-eight hours elapse before improvement begins; it is then often rapid. The antitoxin appears to require this time to produce its effect, and in cases which die within twenty-four or forty-eight hours of administration the largest doses sometimes do not appear to have any effect. Notwithstanding this, the good effects of large doses in advanced cases have been well illustrated in our experience. During the first eleven months of antitoxin treatment our dosage was too small, and the mortality only showed a reduction of 17 per cent.; but, by using much larger doses, we immediately obtained a further reduction of 13 per cent., and this has been well maintained since. The following two cases will serve to illustrate recovery from grave toxæmia:

M. D., aged 4 years, admitted on the fifth day of illness. Membranous patches on tonsils and pharynx. Breathing with stridor and recession, colour dusky, 5,000 units injected. Intubation soon after admission. That evening, though breathing was easy, the child had a bad colour, lips were pale and dusky, pulse rapid and weak, and she was very restless. These symptoms pointed to grave toxæmia, and 3,000 additional units were injected. Prognosis unfavorable.

Second day, no improvement. Tube coughed up once, and replaced. *Râles* and rhonchi in chest.

Third day, condition still very grave. Urine with one-sixth albumen; 4,000 units injected. Tube was coughed up, and she had several attacks of dyspnœa, which were not relieved by reintubation. After a severe attack with cyanosis, Dr. Dixon performed tracheotomy, and extracted a large cast of membrane from the trachea. After operation pulse was extremely weak.

Fourth day, slight improvement, gradually leading to convalescence. The total amount of antitoxin administered was 12,000 units.

E. C., aged six years, admitted on the eighth day of illness. Membranous patches on tonsils and pharynx. Breathing with stridor and recession; 6,000 units injected.

Second day, breathing worse. Intubated; during operation coughed up a large

piece of membrane. Another 3,000 units injected. Pulse poor. Urine scanty: 2 ounces since admission, one-third albumen. Ordered pilocarpin 1.20 gr. and hot-air bath, which caused free perspiration.

Third day, urine 3 ounces, about one-quarter albumen. Hot-air bath repeated. Another 3,000 units injected. Pulse still poor.

Fourth day, urine 3 ounces, one-sixth albumen. Hot-air bath repeated Seems brighter. Intubation tube removed.

Fifth day, better. Perspiring freely. Urine 5 ounces, trace albumen. From this point steady improvement to convalescence. In all 12,000 units were administered.

There is much to be learnt from an analysis of the fatal cases. In 1897, 1898, and 1899 we have had 25 deaths; of these, sixteen occurred within forty-eight hours, and eight within twenty-four hours of admission. They may be classified according to the main cause of death as follows:

Primary toxæmia	6 cases
Bronchial membrane (in two cases combined with pneumonia)	4 "
Pneumonia	9 "
Secondary toxæmia (with scanty urine or suppression)	5 "
Accidental asphyxia (from coughing out tracheotomy tube during night)	1 "
Total	25 cases

The first two headings caused 10 deaths, all of which occurred within forty eight hours of admission. One, an infant of 18 months, was admitted on the third day of illness. At this age the disease runs an exceptionally rapid course. Two were admitted on the fourth, the remainder on the fifth to seventh day of illness. In all the cases under this heading the disease was apparently too far advanced on admission to be combated. They died as most cases used to die before the antitoxin treatment was introduced.

Pneumonia was responsible for 9 deaths, of which 7 occurred within forty-eight hours. Since the introduction of the new treatment this cause of death has come into much greater prominence; for while the antitoxin will neutralize the diphtheria poison, it has no effect on this complication, which is due to a secondary infection. In two cases examined by me this was found to be due to the pneumococcus, but other observers have found the streptococcus pyogenes to be frequently the excitant cause. Two of these cases, both children aged two years, were admitted according to parents' statements on the second day of illness. If the statements were correct, they show that even early treatment of the diphtheria by antitoxin will not always prevent a fatal issue from pneumonia. Clinically these cases may be recognised by their extremely rapid shallow breathing, with high temperature and rapid failing pulse. Physical signs are sometimes to be elicited. Several cases were verified *post mortem*. I have seen cases complicated with well-marked pneumonia recover, but it has more often proved fatal.

Under secondary toxæmia I have included a very important class of cases which I have observed before the introduction of serum treatment, but which has assumed a higher relative importance lately. They are nearly always cases of long duration on admission. The earliest was admitted on the fourth day of illness, but this is exceptional, one on the

fifth, the remainder had been ill a week or more. They have had extensive areas of membrane in nearly every instance. Some have at first appeared to be doing well, but after several days' treatment, the urine is observed to be scanty and loaded with albumen ; sometimes there is complete anuria. At the same time the child develops a painfully-marked restlessness, is totally sleepless, but retains consciousness to the end, while the pulse fades away and often becomes imperceptible at the wrist for many hours before death. These are often classified as cases of heart failure, but they are not properly regarded as cases of simple heart failure.

That the condition of the kidneys is an important factor in the result I have no doubt; but they are not cases of uræmia in the usual acceptance of this term. Convulsions I have never observed, and coma is absent, being replaced by an exactly opposite condition. I have never seen a case in which these symptoms had developed recover under any form of treatment; but of late I have endeavored to anticipate their occurrence in cases with scanty albuminous urine by the injection of pilocarpin (gr. 1-20) and hot-air baths, as in the case of E. C. given above. I believe nasal cases are particularly liable to develop these symptoms, and such cases ought to receive a large initial dose of antitoxin, although their condition at the time may not appear serious.

If we classify our cases since the commencement of the antitoxin period according to the day of the illness on which antitoxin was first administered, we obtain the following :

	Cases.	Deaths.	Mortality.
Treatment commenced on 1st day.....	7	—	
" " 2nd "	39	2	
" " 3rd "	50	6	
" " 4th "	51	4	
Total.....	147	12	8.2 per cent.
" " 5th " or later.....	131	22	16.8 "
Cases of uncertain duration.....	39	6	15.4 "

The two cases fatal from pneumonia, although antitoxin was administered on the second day of illness, have already been mentioned. Of the six deaths among those admitted on the third day, one occurred during the first period of antitoxin treatment when the doses administered were too small. Of the remaining five, four died of pneumonia ; the last case was an infant of 18 months, admitted moribund from toxæmia on the third day of illness, and has been already alluded to. It is the only case we have seen since 1895 in which death occurred from uncomplicated diphtheria treated with antitoxin during the first three days of the disease.

These results emphasize the importance of early treatment. Every medical practitioner ought to have a supply of diphtheria serum and a suitable syringe at hand. In the large towns there is no difficulty in obtaining a supply, and it is easy to keep a few bottles of the liquid serum and to replace them as needed. The liquid preparation is the easiest for use, and may be kept for six months or more without losing its efficacy. Practitioners in the bush townships should keep a supply of the dried serum, which can probably be relied on to retain its strength unimpaired for years. It is absurd that a practitioner several days' journey from the metropolis meeting with a case of diphtheria, should have to telegraph for antitoxin. This is too often not of any use to him by the time he gets it.

All other forms of treatment are of very minor importance. Routine applications to the throat have been altogether abandoned in the Children's Hospital. We only use them when the membrane is sloughy and offensive. It has been argued on theoretical grounds that as antitoxin only neutralises the poison, something should be done to kill the bacilli. But I have found by bacteriological examination that in the majority of cases the bacilli disappear within a few weeks without any local treatment; and in those cases in which they persisted longer I have been unable to hasten their disappearance by such treatment. Local applications are, in nine cases out of ten, unnecessary; and unnecessary treatment is bad treatment. When, however, there is much nasal discharge, gentle syringing with salt and water (a teaspoonful to a pint) is advisable Internal medication has also been abandoned as a routine measure. When the pulse is showing signs of failure, we have given digitalis, strychnine, and alcohol in moderate doses, and these may be of some service. When the urine is very scanty and albuminous, I have lately administered pilocarpin hypodermically (the dose should not exceed gr. 1-20), followed by a hot-air bath, administered by covering the child with a cradle and blankets, under which the moist hot air of a spirit lamp flame is conducted through a bent metal tube. In cases dying from bronchial membrane or pneumonia, inhalation of oxygen gas is of value in relieving distress and promoting euthanasia. I have not seen it save life.

To sum up the whole matter, the treatment of diphtheria consists in the administration of antitoxin early and in sufficient dose. A trustworthy preparation of known antitoxin strength should be employed. There need be no fear of administering an overdose; the only objection to giving an unnecessarily large dose is its cost. To give too little for this reason is a very poor economy. The saving in the number of doctor's visits, not to mention funeral expenses, much more than covers the cost of the serum. In the case of poor patients I have been accustomed to explain the danger of the disease, and have never found them object to the expense of the remedy. Those who cannot afford this are suitable cases for hospital treatment. I would certainly decline to take any responsibility, or to continue to attend a case, if the treatment were objected to, and I hope other practitioners would do likewise. I would appeal particularly to those engaged in club practice, who are more

bound to their patients, to explain to them the need for immediate injection of serum or immediate removal to hospital. Too many patients of this kind have been brought to us too late.

We may say that if patients and medical men did their duty, the former in calling assistance early, the latter in applying the remedy early and in sufficient dose, the death-rate from diphtheria might be reduced to a small fraction of what it is at present, although it has been materially lowered in this colony of late years. Indeed, with the necessary qualifications, we may say no child ought to die of diphtheria. There are no doubt some cases complicated by pneumonia a a very early stage, some thers at a distance from medical aid, some few in which the diagnosis in the early stages is extremely obscure. Cases sometimes occur of laryngeal diphtheria without any visible membrane, and these are sometimes very hard to distinguish from catarrhal laryngitis. In cases of doubt a full dose of antitoxin should be given. Sometimes an attack of diphtheria becomes engrafted on a previous catarrh or tonsillitis and is then very likely to be overlooked in the early stages. But these are all rare exceptions, for the most part death from this disease is avoidable and ought to be prevented.

Notes and References.

[1] Goodall, *British Medical Journal*, 1899, vol. I., p. 197. [2] *Intercolonial Medical Journal*, October, 1896. The figures given of the preantitoxin period contain a few unimportant errors which are here corrected. [3] Owing to pressure of other work, I ceased making these examinations, but I hope they will be soon resumed by the hospital residents, for which purpose a laboratory is being fitted up. [4] Cases showing merely hoarseness, croupy cough, or even visible membrane in the epiglottis are excluded. It is always possible to distinguish laryngeal stridor from pharyngeal stertorous breathing.

DIET IN INFANTILE DIARRHOEA.

Fotheringham, in a paper on "Infant Feeding and Infantile Diarrhea," prepared for the Toronto meeting of the Canadian Medical Association lays particular stress upon the value of prompt intervention in acute cases, and on the giving, for twenty-four hours at least, of nothing but from one to two ounces, every two hours or oftener, of sterilized water, to which a pinch of salt and a taste of sugar, preferably milk sugar, has been added, cannot be disputed. It is borne out clinically, says the author (*Dominion Medical Monthly*) by the fact noted by Booker that "none of the bacteria isolated (from the stools) were found to be capable of multiplying in ordinary hydrant water forty-eight hours after it had been inoculated; in all such cases negative results were obtained." After the first twenty-four hours or so are passed it may be well to attempt the use of some nutritive fluid—and at the outset one must decide whether to use albuminous or farinaceous materials. If the stools are not specially foul albumins may be given, and the best one is probably egg-water. White of eggs contains about 10 per cent of albumin, and should be diluted with about ten times its bulk of sterilized water, with a little salt and a taste of sugar, as it is stated by Biedert that a solution of albumin stronger than 1 per cent. cannot be digested as a rule by even the healthy

stomach, and it is found in practice that a "3-6-1 mixture," as it is called (3 per cent. fat, 6 per cent. carbohydrates, and 1 per cent. proteids) is a very generally useful form of modified milk, approximating closely an average breast-milk. Another good albuminous food is the red meat-juice in drachm doses added to the water or other fluids that may be in use. Liquid peptonoids, panopepton, and so forth, may be mentioned in this class. As to the farinaceous fluids, they are all of the same type, and may be equally well made from barley, rice, oatmeal, sago, tapioca, corn-starch, or arrowroot, so long as one bears certain points in mind. One point is that the more vegetable albuminoids there are the better, and that, other things being equal, the husk and the layers of the grain next it should be boiled as well as the starchy contents of the grain.

Another point is that very thorough boiling is necessary, three to four hours at least, to cause diastatic change and prevent trouble from the indigestible starch. Thorough straining, too, is important. The consistency of a farinaceous fluid should be that of thin to medium cream, such as will pass easily through an ordinary rubber nipple. And now that the nipple is mentioned, it is worth while remarking that if the stomach is irritable it is very often due to the fact that the hole in the nipple is too large, and the child swallows too rapidly.

One of the most useful of all the starchy preparations is likewise the oldest, the good old bag of flour the size of the lower half of the forearm boiled steadily for ten hours. The outer shell is thereafter removed, and the firm central part, like a piece of soft white bath-brick, grated down and slowly reboiled, as required, with water to make a gruel of a consistency varying with the age of the child. For children over six months, at any rate, this is a most useful food in diarrhael conditions.

One will often find whey very useful, made either with sherry, or what I think is better, essence of pepsin or junket powder. It makes an excellent vehicle for liquid peptonoids or red meat-juice.

Fischer, in a recent number of the *N. Y. Med. Record*, speaks highly of very weak cold tea especially when stimulation is desired, and of an acidulated drink made by adding to a tumblerful of plain boiled and cooled water five to ten drops of dilute hydrochloric or phosphoric acid, and sweetening with a little glycerine (a powerful antizymotic) or saccharin.

It is well on inaugurating the change of diet to try to strengthen the interval of feeding—always bearing in mind the urgent need of water to replace the fluids drained from the tissues by the diarrheal loss. Thus, if a child has been getting four ounces, two of milk and two of barley-water, every two and one half hours, one should try to give, instead, say four ounces of barley-water with a drachm of red meat-juice every three to three and one-half hours. As regards temperature, either extreme seems to me bad, particularly in young infants. Some say the food should always be cold. This may apply to children of ten to twenty months, but in infants of, say, three months, it aggravates pain and has no counterbalancing advantage.

The return to milk should be very tenative. Casein should be allowed last, and fat first in the shape of small quantities of cream, say

half to one teaspoonful at each time of feeding, added to the barley-water or other farinaceous fluid, and slowly increased. The cream should never be bought as such, but obtained by removing the top two inches from the jar which has been left five or six hours on the ice.

Rachford goes fo far as to say that "cream is theoretically never contra indicated, and can do no harm in any form of a disease, but will be found to serve the best purpose in chronic cases, and after the third or fourth day in acute cases." My own clinical experience will hardly tally with the statement that "cream can do no harm in any form of the disease." The same writer goes on to say that "meat broths contain so little albumen and carbohydrates that . . they may be given at any time, in either acute or chronic cases; but they are specially indicated in a few cases after the first twelve or twenty-four hours' treatment." One danger in their use lies in the fact that they are very apt to be kept far far too long after making, for they very promptly turn stale. A contra-indication to their use would be foulness of stools or great frequency and copiousness. If the morbid process be mainly a colitis they can be given more freely.—*The Dietetic & Hygienic Gazette.*

THE INFLUENZA PEST.

This dreaded disease has not only dissappointed all hopes of its disappearance but has returned with greater vehemence than ever. It may be doubted whether any previous outbreak has attacked so many persons as the present, although, happily, the mortality has not been nearly so high as that met with in some of the earlier epidemics. Christmas Day all over the United Kingdom was more or less blighted by the advent of this unwelcome visitor, and in many cases both guests and hosts rose from bed to keep their dinner engagements. The unwisdom of such a proceeding, especially in such inclement weather as that which characterised Christmas Day, cannot be too strongly insisted upon. Yet we doubt if many of the foremost offenders have not been medical men, whose disregard of influenza is not a little remarkable, considering their knowledge of the course of the disease. As everyone should know by this time, a slight attack of influenza is just as dangerous as a sharp one. The average individual is absolutely safe if he stay warm abed, but if he go about his condition is at once shifted from security to danger. These facts have been demonstrated again and again until they are mere household maxims in ordinary medical practice. The infectiousness of the disease was well illustrated by the remark of a chemist, who said that when he got one prescription from a large household he knew that sooner or later he should send physic to every one else in the house, including the servants. There has been a famine of nurses, greater perhaps than has been experienced in any previous outbreak. Another feature has been the number of members of hospital staffs attacked by the malady, so that many institutions have been for a time almost entirely deprived of the services of their resident and visiting medical staff. In one case the popular surgeon of a London hospital was married to a lady who actually left the sick-

room, where she had been kept by a sharp attack of influenza to attend the church. What between the "flue" and the war at the Cape, the Christmas season has been anything but festive.—*Medical Press and Circular.*

THERAPEUTICS.

Antitoxin in the Light of Scientific Investigation.

Int. Med. Magazine, October, 1899.—Dr. Robin, pathologist and bacteriologist to the Delaware State Board of Health, Newark, Delaware, wrote this paper to refute the statement made by Dr. Herman in the *Medical Record*. He says that Herman's only evidence was clinical statistics covering a comparatively short period, and himself gave statistics from the hospitals of Berlin and Budapest, and quotes Church, Rouchfuss, Dolinski, Kossel, Behring and others to the effect that the mortality from diphtheria has greatly lessened during the antitoxin period. The author says that the decrease in mortality from diphtheria cannot possibly be due to sanitary improvement, as there has been little, if any, in the condition of the poorer classes. "Most of the diphtheria bacilli, as well as the streptococci are in the pseudo-membrane, and the advisability of its early removal, either by means of antitoxin or local application is apparent." If death is produced by the antoxin it is the result of idiosyncracy, as may happen with many drugs. Paralysis, albuminuria, pneumonia and other complications are less frequent with the antitoxin than without it. The toxin of diptheria is a chemical product of the bacteria, having definite properties and chemical composition. Antitoxin is also a chemical product of cells, and is practically an antidote to the toxin. "One molecule of toxin," says Ehrlich, "combines with a definite and constant quantity of antitoxin. If antitoxin does not cure a case of diptheria it is due to one of the three following reasons. (1) It is not used early enough, streptococci having had time to produce their virulent effect. (2) It is not used energetically enough, too small quantities, or at too rare intervals, being administered. (3) There is a proportion of patients so susceptible to the disease that antitoxin cannot cure them, just as there are patients suffering from malaria who cannot be cured by quinine, or syphilitics who are not cured by mercurials and iodides."—*Medical Fortnightly.*

For the chronic ulcers of tertiary syphilis, Professor Hearn finds acid nitrate in mercury, one part to sixteen parts of water, applied every third day, the best stimulating caustic. It not only destroys the hopelessly diseased tissue, but seems to exert a distinct alternative influence in the less diseased area.

Colic Cure.

℞ Chloroform ..... 1 drachm
Tinte. belladon ..... 1 drachm
Tinct. camphor ..... 1 drachm
Spts. ammon. aromat ..... 1 drachm
Listerine ..... 1 drachm

M. Sig. One-half teaspoonful, *in water*, every twenty minutes until relieved.—*Ashby.*

PROPHYLAXIS OF GONORRHEA.

In a study of the modern views of gonorrhea and its treatment, Dr. Frederic Bierhoff (Philadelphia *Monthly Medical Journal*, July, '99), writes as follows:

"The suggestion of Frank that the female be compelled to thoroughly cleanse the genitals before coitus by the use of irrigations of protargol solution, and that the male be compelled to undergo an examination, seems to me to be by far too Utopian. We cannot devise means to compel the carrying out of the order by either, nor can we punish the female for the acquisition of disease otherwise than by attempting to make her harmless to the community. The most we can do, in such a direction, is to recommend the use of such a cleansing after coitus, and of the instillation into the urethra, by both male and female, of a few drops of a 20 per cent. solution of protargol in glycerine, as proposed by him. This lalter precedure he proved, by a series of conclusive experiments, to be an absolute preventitive of infection, if usely timely. He demonstrated that the gonococci were killed in five seconds. In his article he also mentions the favorable results obtained by Welander of Stockholm, and by Blokusewski, who both employed protargol instillations. Therefore, the measure proposed seems to offer a safe-guard against gonorrheal infection when intelligently carried out." The formula recommended by Dr. Frank consists of protargol 20 parts, glycerine 20 parts, and water 60 parts. This solution is completely unirritating and can be applied immediately after coitus, two or three drops being introduced into the meatus and another drop upon the frenum. In cases of tight prepuce it is advisable to wash out the preputial cavity with a protargol solution.

SLEEP IN THE TREATMENT OF DISEASE.

Dr. Wm. Evart *(British Med. Journal)* discussed this subject at a recent meeting of the Harveian Medical Society. He said:—

"Sleep has two offices, both fulfilled in the long sleep of the night, which it is our usual endeavor to secure for our patients—namely, that of favoring the slow changes of repair, and that of interrupting consciousness by uncoupling the chain of neurons, or by relaxing protoplasmic tension or tone. This relief of tension as, it would seem, the only office performed by the shorter spells of sleep, and therefore the two forms of sleep suggest two therapeutic objects. The night's sleep which comes without any drugs may need to be bettered, and in improving the quality of spontaneous sleep our help is often of value. It might also need to be prolonged.

"The systematic prolongation of sleep for the cure of disease is one of our opportunities hitherto little used. In chorea, sleep entirely subdues the muscular agitation, and this observation has led to the attempt to arrest the disease by prolonging sleep for considerable periods. A complication arises in connection with alimentation which in this disease,

as in most other nervous troubles, is of primary importance. Partly for this reason, and because more than rest may be needed for a cure, the results hitherto reported have not sufficiently recommended the method.

"Prolonged narcosis has also been suggested in excessive wear and tear of the nervous system; and in various nervous affections, including the mental, its renewed trial, combined with suitable methods of feeding, might lead to encouraging results.

"Best suited, perhaps, to our every-day needs is a systematic resort to the shorter sleep. Like the light instalments of food which restore the lost function of appetite and digestion, short sleep in the day may be essential to the cure of nocturnal insomnia. Our growing wealth in hypnotics warrants a hope that a suitable agent may yet be found which in that direction would minister to the health of the invalid, and might command the luxury of sleep at any opportune time for the convenience of the worker.

"Body rest as a systematic therapeutic agent has long found its place in our treatment for patients whom weakness alone, in the absence of medical advice, would not have compelled to take to their bed. To that class belong the frail woman in whom the debility of anemia, of dyspepsia, and of overfatigue develop symptoms often mistaken for hysteria Rest in bed is their first need. In the treatment of chlorosis this is now recognized as the essential element for a rapid recovery. Its methodication employment forms an essential part of the open-air rest cure for phthisis, which within quite recent years has largely replaced at foreign sanatoria the previous method by muscular exercise."—*Charlotte Med. Journal.*

ANTIPYRETIC DRUGS; THEIR USE AND ABUSE IN THE TREATMENT OF FEVER.

—Dr. A. Jacobi read a paper with this title. He said that the most effective antipyretic drugs were those which were directed against the portion of the body engaged in heat production. They acted either on the cells of the tissue or on the heat-regulating centres. Those most commonly employed reduce the temperature by increasing the heat elimination through hyperemia and perspiration. The temperature centres could be paralyzed by large doses of digitalis and of veratrum viride, or by excessive doses of phenol preparations. The effect of quinine was local in the cells, and remained evident even after section of the spinal cord, while the phenols appeared to act both on the centres and on the surface. The latter exerted their influence even when the lower part of the cortex was irritated by puncture. They also promoted analgesia. Some physicians object to antipyretic altogether on the ground that higher temperatures, in the infectious diseases chiefly, were necessary for the formation of antitoxins. But it should be remembered that the typhoid fever bacilli outlived their toxin, and possibly also their antitoxin. The mortality rises with the height and persistence of the high temperature. Pneumonias and typhoids, with fair remissions, permitted of fair prognoses. Relapsing fevers of long duration and very high tem-

perature had a mortality of only 2 or 3 per cent. because of the long remissions. The multiplicity of the causes of fever proved its nature—it was not an entity, but a symptom. Its treatment should not be governed by iron-clad rules. A temperature which might be dangerous to one individual was of little importance to another; moreover, a temperature which might be easily and safely borne at the beginning of an illness might prove very harmful in the later stage of the same disease. The treatment of the symptom, fever, gave us no hope of shortening the disease, of which it formed a part. On the other hand, we could add materially to the patient's comfort, and at the same time not at all interfere with the healing process. To allow a high temperature to deteriorate tissues and exhaust the brain was as injudicious as was the custom of emphasizing the number of degrees of Fahrenheit as the only important part of a morbid process. Protracted fevers interfered seriously with nutrition, and on this account became more serious in proportion to the youth of the individual. He believed more infants and children died of the slow results of protracted high temperature—what was called convalescense—then were destroyed during the active stage of the disease An acute anemia was more easily overcome than a chronic one. To the latter class belonged those associated with, or following diseases attended with high fever and starvation. The younger the animal or person, the sooner would it succumb to starvation. The blood of the child is less in quantity, relatively, and had less fibrin and less salts, and contained more leucocytes than in later life. Most of our antipyretics were at the same time diaphoretics and analgesics, and hence were often powerful adjuvants to baths and other treatment, or were useful substitutes for baths when the latter was distinctly contraindicated.

Quinine.—Quinine affected bacteria but little. In watery solutions of quinine fungi readily grew. This drug diminished the metabolism of albuminates and the amount of uric acid; also the number of circulating leucocytes and their amœboid movement. In small quantities it accelerated the pulse and increased the blood pressure; in larger doses it might cause urticaria or other exanthems, and even albuminuria and hematuria. In fair doses, quinine was certainly antipyretic. Besides malaria, febrile diseases of a remittent type, such as typhoid fever and pneumonia, were very amenable to the action of quinine. In malaria it should be given from three to five hours before the expected attack. Absorption was certainly aided by the addition of diluted alcohol or of spices, but the medication in children's diseases often demanded that certain advantages be sacrificed to palatibility. Oleate of quinine should not be used because of the irritation produced by the oleic acid; inunctions with lanolin were far better, if this mode of administration were used at all. Medication by the mouth was always more or less unreliable when the temperature was high. The neutral tannate, given in doses 150 per cent. greater than the sulphate of quinine, would answer very well, but most physicians would prefer to administer the sulphate of quinine in some vehicle, such as syrup of coffee, chocolate or elixir adjuvans. It should not be forgotten, however, that if quinine were kept in contact with an elixir for some

time, portions would be dissolved; hence the quinine should be mixed with the vehicle only as wanted. Many children would take eagerly considerable quantities of the sulphate if it were mixed with a large proportion of chocolate.

In some cases of chronic malaria, associated with marked tumefaction of the spleen, it would be found that benefit would follow the use of ergot, even when most of the other drugs usually employed in this disease had failed. He had been able to confirm this statement by an experience extending over a period of forty years. It was often advisable to administer the ergot with quinine, or with arsenic.

Salicylic Acid.

Salicylic acid was both an irritant and an antiseptic. It was eliminated through the kidneys unchanged, or as salicyluric acid. It was a nerve sedative, and excited peripheral hyperemia and perspiration. For internal administration the salicylate of soda was better because less irritating. In many cases of pyemic fever the combination of quinine and salicylic acid acted admirably when neither drug alone was effective.

Antipyrin.

Under normal conditions antipyrin increased the pulse and blood pressure, and was, therefore, contraindicated in hemoptysis. It was moderately anesthetic and markedly styptic. It was quite irritating in the subcutaneous tissue. It was sedative and analgesic, but its action was not that of a pure nervine, as it appeared to produce its effect through the general circulation. The body temperature would be diminished with fifteen or twenty minutes after first dose. As a rule, it should be repeated in two hours except where the drug was given for its analgesic effect. This drug had seemed to him ineffective in the fevers of cranial disease.

Acetanalid.

This drug does not disturb the stomach and skin to the same extent as some other antipyretics. Being a derivative of anilin, it was poisonous; not only did it paralyze the central nervous system, but it decomposed the blood.

Phenacetin.

Phenacetin resembled acetanilid in its action, but was much milder. He never ordered adults more than three grains as a tentative or first dose.

Alcohol.

Alcohol possessed the great advantage over most antipyretics of rapid absorption in the stomach. As a dose of half an ounce was liable to prove fatal to every child less than ten years of age, one should well consider its advantages and disadvantages before using it. He was not one of those who withheld alcohol altogether. Alcohol was exceedingly well tolerated by feverish patients. In the aseptic fevers, at least in their earliest stages, it was rarely required, but in the infectious diseases, and in septic cases generally, the doses tolerated and required might seem excessive to the inexperienced. He had long been a firm believer in the value of large doses of alcoholics in grave cases of diphtheria. The large

doses often taken easily during the height of such a disease would no longer be tolerated as soon as convalescence had been established. For the antipyretic effect large doses of alcohol were required, and, therefore, it should not be given for this purpose except in septic cases. It should not for the same reason be given in the early stages of pneumonia for its antipyretic action. It was well to remember that 4 per cent. of the alcohol was eliminated through the lung, and that it was not wise to throw this extra work upon the lungs while these organs were in a state of acute inflammation.—*Pediatrics.*

Treatment of Bronchiectasis with Fetid Expectoration.

℞ Natural acetate of lead ...0 gr. 015 to 0 gr. 03 centgr.
Terpine .....0 — 15 to 0 — 30 ——
Dover's powder.....0 — 10 to 0 — 15 ——
M. Make twenty such pills. Take two or three pills a day (for an infant 2 years old).

From time to time stop the above and substitute the following:

℞ Guaiacæ .....
Fowler's solution, āā .....8 grammes (℥i)
Oil of Eucalyptus .....4 " (℥ij)
M. Ten drops morning and evening.—*Sem. Medical.*

Simple Catarrhal Conjunctivitis.

℞ Acidi borici .....gr. xl.
Sodii chloridi .....gr. vi.
Aquæ camphoræ
Aquæ destil, āā .....℥ii
M. Sig. Apply as lotion to eye every two hours.
—*Journal Amer. Med. Association.*

The Roetgen rays will reveal large cavities in the lungs, and large effusions into the pleura; but say the best we may, small areas of consolidation are hardly ever distinguishable.—*Manuel de Diagnostic Médical Debove-Achard*, Paris, 1899.

Heroin.—Heroin is not so harmless as was formerly supposed. It has a far greater depressant action on respiration than is seen in the case of morphine. Heroin is also a cardiac depressant, and in addition gives rise to muscular twitchings and convulsions. The maximum adult dose at present should not exceed 1-14 grain. Harnack (Münch. med. Woch., July 4, 1899.)—*Monthly Cyclop. of Prac., Med.*, September, 1899.

Treatment of Chlorosis.—The following method of treating chlorosis was advocated by Sir Andrew Clark. With careful attention to the diet and a tepid sponge bath, followed by brisk toweling night and morning, he prescribed the following mixture:—

℞ Ferri sulphatis..... gr. xxiv.
Magnes sulphatis..... dr. vj.
Acid. sulph. aromat. . ..... dr. j.
Tinct zingib. ..... dr. ij.
Infus. gentian comp. vel quassiæ q. s. ad..... oz. viij.
M Sig. One-sixth part twice daily, about 11 and 6 o'clock.

Occasionally this acid mixture produces sickness, dries the skin, and is otherwise ill-borne. In such cases he prescribed the following alkaline mixture :—

R	Ferri sulphatis	gr. xxiv
	Sodii bicarb	dr. ij.
	Sodii sulphatis	dr. vj.
	Tinct. zingib	dr ij.
	Spt. chloroformi	dr. j.
	Infus. quassiæ q. s. ad	oz. viij.
M	Sig. One-sixth part twice daily, at 11 and 6 o'clock.	

Sometimes neither mixture agrees with the patient, in which case he prescribed sulphate of iron pill with meals, and a saline aperient on first waking in the morning. By this plan Clark held that nine out of ten cases recovered in one to three months, and by careful attention to the bowels, taking twice a week a pill composed of aloes, myrrh and iron, the recovery probably would be permanent.—(*Practitioner*, lxiii. 359).

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(9) LANDAU'S TREATMENT OF GONORRHOEAL CERVICAL CATARRH.

Feigl (*Wien. med. Woch.*, November 4th and November 11th, 1899,) has treated 50 cases of gonorrhœal cervical catarrh by the method introduced by Th. Landau, which is founded on the mutual antagonism between certain micro-organisms; in this case between the yeast fungus and gonococci. The author's results have not been so brilliant as those obtained by Landau (v, Epitome, vol. i., 1899, par. 289), possibly because in all his cases the diagnosis of gonorrhœa was confirmed by a microscopic examination of the secretion, while in Landau's the diagnosis was made clinically; the cessation of discharge being no guarantee of the cure of the gonorrhœa. The treatment was carried out exactly as described by Landau, 10 to 20 c.cm. of ordinary fresh beer yeast, mixed with a small quantity of beer, being injected every day or every few days into the vaginal fornix with a syringe. Before the injection the vagina is cleansed with a douche of hot water and dried with a cotton wool, and after it is given is plugged with a tampon. The average number of injections given to each patient was 6, the greatest 21. Though a slight diminution in the number of times the gonococcus was found, when repeatedly looked for microscopically, was observed, the gonococcus did not finally disappear even in the cases treated the longest. In 23 cases, with scanty mucous or muco-purulent secretion, there was a clinical improvement, the discharge becoming more watery or altogether ceasing, but in more severe cases the treatment almost always failed, and had to be abandoned in favor of old methods. Some cases, especially when the injection was made only once every second or third day, became decidedly worse, with an exacerbation of the inflammatory symptons. In one case the injections were followed by slight, in a second by severe parametritis, but in all the other case were well borne. Feigl does not, therefore, consider

the method to be any improvement on those previously in use, which consisted in rest and cleanliness for acute cases, in the application of some astringent on a Playfair's probe every few days, and the introduction of vaginal tampons soaked in tannin-ichthyol glycerine twice a day.

Brit. Med. Jour.

ARTIFICIAL DILATATION OF THE CERVIX IN PRIMIPARAE

Frarier, in his recently published monograph upon this important subject (Paris, Bailliére, 1899), sums up his own discussion of the subject as follows:

"Given the question of accelerating the first stage of (normal) labor in primiparæ, while at the same time maintaining the physiological character, what method ought we to employ when labor is tedious and painful.?

"Such interference ought to be inoffensive for both mother and child, ought to be thoroughly practicable, ought to assist the first stage without compromising the succeeding stages of labor; it ought, further, to have a constant value in routine obstetrics.

"Electricity is both dangerous and difficult, while its results are inconstant.

"With regard to hot injections, those of the intravaginal sort are harmless to mother and child, but only feebly active. Hot intra-uterine injections, distinctly oxytocic, may lead to detachment of membranes or placenta and predispose to postpartum hæmorrhage. They are extremely inconvenient as they condemn the patient to prolonged immobility. They often rupture the membranes prematurely and lead to displacement of the normal presentation. These inconveniences more than counterbalance the benefits of the method, which might otherwise be considerable.

"Is the use of chloroform more advantageous? The best it can do is to regulate the irregular pains which may characterize the first stage of labor. For the rest, cholorform, as well a chloral, has a deplorable action on the cervix in noruterine inertia."

The use of quinine leads to but indifferent results, which may often be harmful. *Lactose*, however, is evidently a drug in which the author has more confidence than he likes to admit. This apparently inert substance, given in two doses of six drachms each, actually fills all the indications originally laid down by the author with the sole exception of constancy. In more than half the cases in which it has been employed, it has been a marked success, and in his final summary it is placed next in efficacy to incision of the cervix.

The various mechanical dilators, air and water bags, are repudiated by the author in connection with normal labor in primiparæ. The drawbacks more than counterbalance the doubtful utility of these implements.

The general attitude of the author's criticisms of methods employed in dilating the primiparous cervix has clearly foreshadowed some measure which most nearly fulfills the indications originally specified. This measure we find to be simply incision.—*Medical Review of Reviews.*

SURGICAL SUGGESTIONS.

Evacuate pus wherever found. To wait for the action of poultices to decompose the skin, or "draw" the pus, is unworthy a modern surgeon.

Immediate amputation of an injured member is now seldom required. Control hemorrhage, dress antiseptically, and await reaction.

While the foregoing treatment will give by far the best results, altogether it must be remembered that the danger from cardiac and pulmonary embolism is increased where an effort is made to save bruised tissues.

A wise surgeon sacrifices no tissues that, if saved, would prove useful. Flaps, in order to heal kindly, must be free from tension,

Err in making flaps too long rather than too short.

In amputation, where bones are sawed, it is most difficult to keep thorough acepsis until the healing process is complete.

Bandages should be adjusted so as to control hemorrhage from the stump after amputation, but great care must be taken that they be not drawn so tightly as to affect nutrition by obstructing the circulation.

Unless there are indications, such as rise of temperature, soiling of the dressing, or hemorrhage, a single dressing should suffice for an amputation.

Do not inject cysts or vascular tumors with remedies tending to produce coagulation unless free drainage is provided.

Cysts should be evacuated or dissected out, while vascular tumors are best treated by excision or cutting off the blood supply.

Varicose veins should be ligated at suitable points and the intervening portion of the vein removed.

Injecting varicose veins with astringents and irritants is unsatisfactory, and not without danger.

Arteries and veins should be ligated with as little manipulation as possible.

Esmarch's bandage has rendered operations upon bones almost as simple as upon the cadaver.—*Dr. Bell, in Medical Herald.*

HOW TO ABORT A COLD.

Max Nassauer asserts that an incipient cold in the head can be checked if the nose is thoroughly rinsed with a weak (pale pink) solution of potassium permanganate, which seems to have a specific action upon the germs of coryza. It checks colds in the first hour or so. After blowing the nose vigorously, both nostrils are well rinsed out with the solution, the fluid being allowed to run out through the other nostril and through the mouth. Each nostril is wiped out with cotton on the finger. A small dry plug of cotton is then well pushed up into each nostril, and the nostrils are filled with the weak solution, with the head held back, the cotton being allowed to soak it up. The plug is left undisturbed for about an hour, when it can be expelled by blowing the nose. Even an established cold is favorably influenced by this treatment but it is most effective when the sneezing, tickling and increased secretion announce the onset of the attack. — *Practitioner: Cincinnati Lancet-Clinic.*

TORONTO MEDICAL SOCIETY.

(Stated Meeting February 1st, 1900.)

Subject, " Puerperal Fever."

Dr. F. N. G. Starr, Vice-President, in the chair.

Dr. W. J. Wilson, in opening the subject said:—Among other causes of this condition the numerous small tears and cracks occurring in the vagina and os uteri gave the required entrance for pathogenic organisms, especially if from any cause the powers of resistance were below the normal. The constant recumbent position was also a danger by retarding drainage and favoring retention of lochia. Another important cause was the patient's own finger, by conveying organisims from discharging nose or ear or boils, etc. The surroundings of the patient might be at fault, milk and food might convey the organism, also the urine since the pressure of pathogenic germs had been demonstrated in the excretion.

The physician or nurse should not be blamed except on absolute proof.

Prophylaxis was the proper treatment. Abnormal discharges should be washed out. When sepsis had set in the uterus should be explored by the finger and debris removed and an antiseptic wash given. He warned his hearers against the use of ac. carbol. as liable to produce collapse. The system should be flushed with salt solution, the patient being supported until the disease wears out.

Dr. H. T. Machell followed on the "Early Diagnosis," He did not agree with Dr. Wilson that the use of carbolic acid in swabbing out of the uterus was liable to produce collapse. No one liked to admit that he had a case of sepsis. The early signs were:—After a normal labor on from he second to the fifth day a sudden rise of temperature above 99° or 99½° F. should call for inquiry. Headache, loss of appetite, sleeplessness, quickened pulse, a sense of impending danger, and an anxious countenance, should warn the attendant to investigate. The patient should be placed in a good light and ocular as well as digital examination carried out. If abnormal tenderness is found at the fundus, the os uteri patulous, and uterus soft with cervix looking irritable, there could be no doubt of sepsis, especially if foul discharges are present. All other causes should be carefully excluded.

Dr. J. F. W. Ross followed on "Retained Placenta" as a cause. He divided the causes in to four heads:

I. Traumatism, lacerations of uterine fundus, wall, vagina, perineum.

II. Presence in abdomen of some foreign body, becoming inflamed or ruptured, as ovarian cyst, etc.

III. Pressure of latent gonorrhœa.

IV. Retained placenta.

He credited the last two with 50% of the cause. The inspection of the secundines was not sufficient to exclude retention of a portion of the placenta.

Dyphtheria, typhoid fever, diseases from food, were diseases of the puerperium. He did not believe in epidemic puerperal sepsis without actual contact as a means of conveying the infection. He had investigated a supposed epidemic in which he found gonorrhœa twice, and

placental retention accounted for the three cases which had occurred in a certain institution following rapidly upon each other and called epidemic. He had removed pieces of afterbirth from a great many cases and claimed that the uterus should be explored as a matter of routine with the finger, and if necessary the hand in the vagina. Most patients were under an anæsthetic, and there could be no objection, and if necessary give the the anæsthetic and examine thoroughly, also examine for rents in the body of the uterus behind

Dr. J. J. Mackenzie on the "Bacteriology" said Doederlein in 1892, from a series of 195 cases, concluded that the vaginal secretion in 55.3 per cent was normal, sterile and markedly acid, made up of epithelial cells, large numbers of long, tolerably thick bacilli and occasionally a few yeast cells: in 44.6 per cent abnormal, more fluid in character, less acid and occasionally neutral or alkaline, and varieties of bacteria, cocci and short bacilli.

In 1894 Kronig, as a result of 100 cases, stated that the vaginal secretion of pregnant women who have not been examined never contains organisms which grow aerobically upon ordinary media at the body temperature except yeast gonococci, and therefore never contains septic bacteria. Williams, of Baltimore, in 1898 published an article agreeing with Kronig. The conclusion was that auto-infection was improbable if not impossible.

Dr. K. C. McIlwaith on the "Treatment." He divided puerperal fever into two forms, sapræmia and septicemia.

In sapsemia the treatment was not so radical. Drainage must be favored and uterus examined. He claimed the retention of placenta was not a cause until it became infected by the introduction of pathogenic organisms He objected to the use of the curette except where failure with the finger rendered the dull curette a necessity. Then flush with an antiseptic douche. General treatment consisting of tonics and food, also the elimination by mag. sulph. Lacerated points should be touched with carbolic.

The treatment for the second class was the same.

Antistreptosoccic serum had not proved successful as yet.

Discussion.

Dr. C. J. O. Hastings said the term puerperal fever was a misnomer. The disease was identical with septic infection in any surgical case. He thought he could tell if all the placenta were away by inspecting.

Dr. Hunter still believed in auto-infection and agreed with Dr. Ross that the uterus should be examined.

Dr. Starr said it was as necessary to disinfect the external genitals as the attendant's hands. How many were in the habit of washing off the external genitals when attending a case of obstetrics before making an examination? He also said that the cavity of the uterus should be wiped out with gauze after using the finger or curette to remove hanging particles too small to be caught and still attached enough to resist the douche. He had had a case when a pseudo membrane had formed and infection gone on beneath it.

Drs. Oakley and Walker also spoke.

Dr. Wilson replied that collapse had occurred after the use of ac. carbol. in a case he had. He said gonorrhœa was rather rare in country practice.

Dr. Machell protested against Dr. Ross' suggestion. If it became a rule of practice puerpural mortality would be more than doubled. He did not believe that 50% were due to retention of placenta. He saw no use in the eliminative treatment in a routine way.

Dr. Ross said antiseptic surgery has not relieved the mortality from puerperal fever. No attendant would hesitate to pass the entire hand to remove an adherent placenta, yet the mortality was not greater in that class than any other. The lochia was infective.

Dr. McIlwaith said the retention of placenta was the cause in a very small number of cases, and could only become so when infected by the introduction of germs from below.

The society adjourned.

A. G. ASHTON-FLETCHER, M.D.C.M.
Recording Secretary.

THE EIGHTH COMMANDMENT IN MEDICAL JOURNALISM.

Under the above heading THE LANCET, owing to the unfortunate oversight of not crediting the source of some selections made use of in its pages during the past year, comes in for some caustic, though we regret we cannot say, unmerited criticism from some of our contemporaries. A year ago the editorial staff of the journal resigned, and in the somewhat disorganized state of affairs that followed, the matter complained of occurred. For this the present staff disclaims all responsibility. In justice to our contemporaries, however, we wish to express our extreme regret at the occurrence and our strongest disapproval of such a breach of the ethics of medical journalism.

While in the present instance we believe from information received, that it was the result of an oversight, we do not wish to claim this as a satisfactory defence.

THE LANCET with the March number will be under the control of an entirely new staff, with an editor in charge, responsible for the conduct of the journal, and associate editors, responsible for each department This staff will endeavor to maintain the high reputation for integrity and journalistic honor, which has characterized the "CANADA LANCET" since its establishment in 1867, and will be assured that it will not again be necessary to appear in the rôle of apologists in a matter so thoroughly distasteful and indefensible.

The Canada Lancet

A MONTHLY JOURNAL OF MEDICAL AND SURGICAL SCIENCE, CRITICISM AND NEWS.

The Oldest Medical Journal in the Dominion: Established 1867

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EDITORIAL.

VACCINATION IN THE PROPHYLAXIS OF TYPHOID FEVER.

The publication, by Prof. A. E. Wright and Major Leishman, R.A.M.C., Army Medical School, Netley (*Brit. Med. Jour.*, Jan., 1900), of the results obtained by their Antityphoid inoculations, brings to the notice of the profession a most important departure in the preventive treatment of typhoid fever. If future investigations and wider experience confirm what their Indian statistics appear to establish a decided advance will have been made in dealing with the disease.

Apart from its scientific aspect, their work will be followed with particular interest at the present time on account of the exposure of our troops in South Africa to this dreaded scourge of military camps During the late Spanish-American war, which is not altogether an exception to the rule, the actual casualties on the field were comparatively insignificent, compared with the mortality from typhoid fever in the camps. Modern preventive medicine has done much to hold the disease in check, but the overcrowding, the privation and exposure, the contaminated water supply, bad drainage, and many other insanitary conditions, necessarily connected with the hasty massing of large bodies of men in camps, and especially in besieged garrisons, render it almost an impossible task to prevent the outbreak of typhoid and other filth diseases, in proof of which we have only to note the presence of these diseases among the troops at Ladysmith.

Antityphoid inoculations have been largely resorted with the hope of immunizing the troops in the present South African campaign, and if

successful, not only will it result in a great saving of life, but it will have a most important bearing on the final issue of the war. From a military point of view, the far-reaching importance of the success of this method of treatment will appear, when we remember how much efficiency for active service depends upon the health of the men.

Warned by past experience, however, the profession will be slow to hail with too great acclaim, any brilliant scientific promises, no matter how devoutly to be wished, until they have fully satisfied the test of practical utility. While witholding judgment until further data are forthcoming, the work of Professor Wright and Major Leishman certainly gives us good reason to hope that we have obtained for typhoid fever a means of prophylaxis scarcely less efficient than that of antitoxin in diphtheria, or vaccination in smallpox.

In their investigations they have followed practically the same mode of procedure used by Haffkine with considerable success in his anti-cholera inoculations in India. The vaccine used consists of a pure culture of the typhoid bacillus, attenuated by being sterlized at 60°c, to which 1% lysol was added for preservation. The amount used for each inoculation varied from .5 to .75c.cm., this being the minimum dose fatal to a hundred grammes of guinea-pig. Following inoculation, the patient shewed a fairly severe reaction, and the blood of immunized individuals responded to the Widal test the same as that of patients suffering or convalescent from an attack of typhoid fever.

The subjects for inoculation were chosen from among the British troops stationed in various parts of India, new-comers and others particularly liable to contract the disease being specially selected. Altogether among 11,315 troops, 2,835 inoculations were made. Among those inoculated, 27 cases of fever subsequently developed (.95%), of whom five died (.2%).

Among the 8,460 uninoculated troops, during the same time, 213 cases of typhoid developed (2.5%), with 23 deaths (.34%).

Looking at the figures as they stand, it will be seen that the occurrence of typhoid fever and the mortality were both much less among the inoculated troops. These figures, however, appear in a much more favorable light when we consider that the thoroughly seasoned and acclimatized soldiers were excluded from inoculation, only those who considered themselves particularly liable to take the disease, subjecting themselves to the treatment. Moreover, the circumstances under which the inoculations were carried out were not the most favorable, and there were no opportunities for re-inoculation. The investigators had difficulty in obtaining a sufficient supply of vaccine, having to frequently re-sterilize that used

in order to preserve it aseptic, with the probable result of lessening its potency. It would not, therefore, be unreasonable to expect more favorable results from the use of a properly standarized and well preserved vaccine, with the treatment carried out under more satisfactory conditions.

The artificial immunity produed is said to last from one and a half to two years.

The rationale of the treatment is essentially the same as that of vaccination in smallpox—the inoculation of an attenuated form of the typhoid bacillus or their toxines producing a modified or mild type of the disease, resulting in the production of an immunity from the more severe attacks.

The authors refer to the possibility that the antityphoid inoculations may confer a degree of immunity against malaria, that disease occuring less frequently among the men subsequent to treatment. This, on scientific grounds, is rather difficult to believe and much stronger proof than is yet forthcoming will be necessary to establish the truth of the statement.

PERSONAL.

Dr. McNulty (Tor. '98), for the past two years house surgeon at St. Michael's Hospital, has begun practice in Peterboro.

Dr. A. H. Garrat has removed to his handsome new residence on College street.

Dr. J. N. E. Brown, clerk of the Yukon District, was married on January 1st 1900, at Dawson City, to Miss Freeman (Faith Fenton), of Toronto. Dr. Brown was a member of the house staff of the Toronto General Hospital 1892-3, and was secretary of the Ontario Medical Association for a number of years. He practised for some time in Toronto, but went to the Yukon two years ago as secretary to Commissioner Ogilvie.

We are pleased to hear that Dr. Meyers has concluded the purchase of the property formerly known as the Deer Park Sanitarium, which he has changed in the past two years into a private hospital for the treatment of nervous diseases exclusively. As none of the class of patients for which the Deer Park Sanitarium was established has ever been received under the present management, this name has no longer any significence and it will in future be known as a private hospital. The advances of neurology of recent years have shown the increasing necessity of a properly equipped private hospital for the treatment of neurological cases, and the results so far obtained have amply justified the hope that useful work could be done in Canada in this important branch of general medicine.

Dr. V. A. Hart, of Sault Ste. Marie, Michigan, and Dr. J. L. Bradley, of Creemore, sailed from New York on the Lucania on Feb. 10th. They propose spending some time doing hospital work in Great Britain and on the continent.

OBITUARY.

Dr. Harry Chapple, of Billings, Montana, who for the past two years had been suffering from Addison's disease, died on January 10th in Arizona, where he had gone for his health. The deceased was born at Orono, Durham County, Ontario, and graduated at Trinity Medical College in 1889. He began practice in Billings, where he was very successful. He was elected mayor of the town, and he was also at the time of his death Deputy Grand Master of the Masonic fraternity of Montana. Dr. Chapple was married to Miss Mattie Murphy, of Brantford. His many friends regret that death has so early ended a promising career.

Dr. Josiah Roseburgh, who graduated from Trinity Medical College in 1893, died suddenly last month, in Michigan, where he had established a successful practice.

Dr. J. H. Corbett, of Orillia, died suddenly on January 31st. He had had been attending to his professional duties and was driving home from a visit to the Indian Reservation at Rama, when he was apparently taken faint. He was carried into the office of a brother physician, but expired almost immediately. Dr. Corbett was the oldest physician and one of the most highly esteemed citizens of Orillia. He was a staunch Tory and a devout member of the Church of England. He leaves a widow and ten children. His family have the deepest sympathy of the community in their bereavement.

THE IMPORTANCE OF PROLONGED REST IN BED AFTER ACUTE CARDIAC INFLAMMATIONS IN CHILDREN.*

BY L. EMMETT HOLT, M. D.,

Professor of Pediatrics, New York Polyclinic; Attending Physician to the Babies' and to the New York Foundling Hospitals, New York.

The general impression prevails that the prognosis is acute cardiac inflammations of a severe type is much worse in childhood than in later life. Certainly the consequences of such inflammations which are continually brought to the physician's notice, whether in hospital, dispensary or private practice, would seem to justify the opinion.

There are three reasons why cardiac inflammations are likely to be especially serious in young children: (1) the frequency with which both the endo-and pericardium are involved; (2) the great tendency to acute dilatation; (3) the liability of these attacks to be complicated by pneumonia.

The cardiac muscle, like the voluntary muscles, in young children, has by no means the resistance which it attains in later life; as a consequence of this, it happens that under the strain of an acute inflammation, dilatation comes on very readily and progresses more rapidly than its adults. The danger of dilatation is much increased in cases complicated by pericarditis. It if largely owing to rapid dilatation that

*Read by title before the American Pediatric Society, Deer Park, June 29, 1899.

we see so many cases succumb during the acute attacks, and it is usually in consequence of progressive dilatation that cardiac failure with dropsy and all its attendant features so often follows within a few months after the primary attack.

It is this condition of the heart walls which must be the chief consideration in the treatment of acute attacks, not only during the period of active inflammations, but for a considerable time afterward. I have long been of the opinion that if we would minimize the injurious effects of acute endo-pericarditis, we must secure to these patients as nearly absolute rest as is possible; and that, not simply for a period of two or three weeks after acute symptoms, but for as many months.

With adults the amount of work required of the heart may be pretty well regulated after the patient is sitting up or even walking about. With children, however, it becomes a practical impossibility to control or regulate the amount of exertion when once they are allowed out of bed. With them, therefore, if rest is to be secured at all, it can be accomplished only by strict confinement to the bed and in a recumbent position. This must be continued long enough for the heart to regain its tone and for a readjustment of the circulation to take place. In practice, I have not found this as difficult in any case as had been anticipated.

The two cases whose histories are given below, illustrate in a striking way the benefit resulting from this plan of treatment. They are selected as representing types of most serious inflammation affecting both the endo- and the pericardium; both were complicated with pneumonia and both were nearly fatal in the acute stage. The third case illustrates only too well what is so often seen to follow where children after acute heart inflammations are allowed to be up and about as soon as their general symptoms permit. All of these cases were observed in private practice and all were living under circumstances which made possible anything and everything which the patients required.

CASE 1.—*Acute rheumatism; endo-pericarditis; two attacks of pneumonia: condition of the heart two and a half years after the primary attack.*

C. D, male, three and a half years old, a private patient living in the best surroundings; under close personal observation since infancy. Never any previous illness of importance. Family history strongly rheumatic; the mother, an older brother and sister had suffered from repeated attacks of acute or sub-acute articular rheumatism.

The boy was taken on March 9, 1897, with chilly sensations, vomiting and high fever. He was seen on the following day with a temperature of 102.5° F., and seemed much prostrated, but a careful physical examination gave no clue as to the cause of the constitutional symptoms. On the third day, the temperature having continued, an eruption of urticaria appeared upon the hands and thighs, and this on the following morning gave place to quite a remarkable erythema, which occurred in large patches of symmetrical distribution, especially about the knees, ankles, abdomen and back. The larger patches were somewhat larger

than the hand, and the smaller ones scarcely an inch in diameter; all were sharply circumscribed, and all of the same dark, purplish color, looking almost hemorrhagic. This eruption faded after two or three days, changing to a coppery hue before it disappeared. Coincidently with the eruption there occurred pain, tenderness and swelling of the large joints of the left lower extremity, and on the next day the joints of the right side were also affected.

On the fifth day of his illness a distinct systolic murmur was heard for the first time at the apex of the heart. The temperature is shown on the accompanying chart.

The early part of the second week of the illness was characterized by a gradual subsidence of the articular symptoms, slowly falling temperature, and improvement of the general condition; but the cardias murmur persisted and became gradually more and more pronounced. The urine was highly acid, and contained traces of albumin, and there were frequently recurring outbreaks of uticaria. The treatment so far had been salicylate of soda, given in as full does and as regularly as the stomach would permit, and a sufficient alkaline salt to overcome the high acidity of the urine. As much as gr. vii. of the citrate of potash was required every two hours to produce this effect. The lungs thus far had been normal.

On the thirteenth day a sharp rise in the temperature occurred, with considerable dyspnœa, which was explained two days later by the development of acute pericarditis, and subsequently by pneumonia of the left lung. Loud pericardial friction sounds were heard over the upper half of the cardiac area. The prostration now became marked, and the pulse, which had previously ranged from 110 to 125, rose to 140. The stomach became so irritable that all food and almost all medication had to be interrupted, and the general symptoms were most disquieting.

On the sixteenth day (March 25th) a small area of pneumonia was discovered at the left base behind, which rapidly extended until nearly the entire lower lobe became consolidated. For the next week the pneumonia became the most important condition, and the child remained in a very critical state. Nothing but a little bovinine and whiskey could be retained in the stomach, and he was kept alive chiefly by the use of oxygen, which was given almost continuously.

The heart's action became very weak and at times irregular; the pulse ranged from 140 to 150, and the whole precordial space throbbed violently under the laboring action of the heart. There was now a double murmur at the apex; steadily increasing dilatation was evident, the apex beat being now one-half inch to the left of the nipple. For three or four days it did not seem possible that the heart could continue to hold out against such odds. But gradually at the end of the third week things took a turn for the better, and slowly there was improvement, first in the general symptoms, and a little later signs of resolution appeared in the lung. Things progressed quite favorably for the next three or four days, and the signs of consolidation had entirely disappeared; but on April 5th, without any assignable cause, the temperature again rose, pulse increased to 154, respiration ran up to 60, and for the second time the left lower lobe became almost completely solidified.

During the next four days his condition was worse than at any previous time during his illness. Food had to be practically discontinued on account of the irritability of the stomach, and only the smallest quantity of stimulants could be retained. Oxygen was given constantly and strychnine and digitalin pushed as far as possible. He had now become greatly wasted; respiration ranged from 60 to 70; there was extreme pallor, great muscular feebleness and almost every day two or three attacks of syncope. Gradually he rallied from this low condition, and by April 11th, for the second time, resolution was well under way in the lung, while the clearing tongue and returning appetite indicated an improvement in the digestive organ. It was really remarkable to see how the heart stood the strain of this second attack of pneumonia. The dilitation increased steadily, and the organ labored hard to keep up the circulation, but the odds were so great that on several occasions it would seem that the heart could not maintain the effort. Once or twice, even after there was marked improvement in the lungs, attacks of syncope came on, in one of which, I think, he would have died but for prompt and energetic stimulation.

It was not until the end of the fifth week of his acute symptoms that there was really any continuous improvement. The apex impulse was now ¾ inch to the left of the nipple and about the same distance below the mammary line. The pericardial friction sounds had disappeared, but there was a double murmur at the apex, the systolic one being loud enough to be heard over the whole left chest in front and behind. The impulse was heaving, but the pulse most of the time continued regular. From time to time during the next week or two, slight articular manifestations of rheumatism occurred, but they were not severe nor persistent.

After this time the progress toward recovery was rapid. The digitalin was continued until the 10th of May, and after this only strychnine used. Even during this month a marked change took place in the heart. The apex beat receded until it was nearly in the mammary line, although there was no change in the murmur. No dropsy had been present at any time. The lung had entirely resolved. Up to this time the child had been kept absolutely flat on his back, not being allowed even to raise his head.

On May 12th he was taken out of doors for the first time in a rolling chair, still being kept entirely recumbent. This was continued daily; but it was not until the 1st of July that he was allowed to sit up, and not until August to put his foot to the floor or take a step.

On July 1st he was taken to the country and kept there nearly three months for the most of the time being in the open air, lying flat in his rolling chair. No return of the rheumatism and no symptoms referable to the heart occurred during this period.

I examined him again carefully on October 1st. He was apparently in as good physical condition as ever in his life. He had grown fat, strong and was no longer anæmic; the pulse was regular and from 104 to 110 a minute. The apex impulse was now one-half inch *inside* the

mammary line and only one-half inch below the nipple. The systolic murmur was still heard at the apex, but it was not loud, and audible only over the heart and at the angle of the scapula behind. The presystolic murmur had entirely disappeared; no trace of pericardial friction sounds could be heard, and lungs, liver and spleen were normal.

During the succeeding winter he was gradually allowed more and more liberty in the way of exercise, and was permitted to walk in the street and about house on the level, but not to go up and down stairs without assistance.

June 1, 1899.—It is now over two years since the acute attack. The boy has been kept under close observation and heart carefully examined at short intervals during this period. For more than a year no restraint has been placed upon the child's activity except that of avoiding violent, romping play. He runs about, goes up and down stairs, rides a tricycle and, in fact, does almost everything that any six-year-old boy does, and without the slightest inconvenience of any kind. The apex beat remains fully one-half inch inside the mammary line and in the fifth space. No unnatural impulse in the cardiac region is noticed. The murmur has become much less distinct, but is still easily recognized. There has been no dropsy and no return of rheumatic symptoms. At no time has the child complained of the slightest discomfort which could be attributed to his heart. The general health has remained good with the exception of a chronic indigestion during the past spring which continued for over two months, and, although he lost several pounds in weight, became very pale and excessively nervous, his heart stood the strain remarkably well. It was carefully watched with a good deal of anxiety, but did not seem to be affected in the slightest degree. He is now well-grown and considerably above the average both in height and weight for his age.

November 13, 1899.—I examined him to-day for the first time since the summer. There has been no striking change since June, except that the murmur is much fainter and behind is heard only with difficulty. The apex beat remains in the same situation. He never complains of his heart, though he is of an active, restless temperament and never quiet. He is gaining rapidly in height and is somewhat paler than usual, but otherwise in excellent health, and has had no rheumatic symptoms since his primary attack.

Case II.—*Pericarditis with effusion; endocarditis; two attacks of pneumonia; malaria; condition of the heart twenty-one months after the acute attack.*

E. P., eight years old; female. Seen in consultation with Dr. W. H. Risk, of Summit, N. J., February 3, 1898.

The family history was strongly rheumatic on the mother's side, and a younger sister of the patient had died two years before of acute rheumatic endocarditis and complications. The patient had always been considered a rather delicate child, but she had never suffered from any of the ordinary infectious diseases. The present attack was preceded about a month by an irregular fever which was regarded as malarial and which continued for two weeks. After this she was well enough to go out coasting on January 29th. This exposure, however, was followed by a

high fever, which marked the beginning of her illness, and the child from that time had to be kept in bed. During the five days preceding my visit the temperature had ranged from 101 to 104 deg.; the only other symptoms were great restlessness, marked by prostration and a short, teasing cough.

On examination I found a pale, thin girl, with considerable dyspnœa, the respiration accompanied by a short expiratary moan; temperature, 103.6 deg. F.; pulse, 136 and weak; respiration, 50. Her general appearance was that of a child who was very ill. Over the left chest in front there was marked dulness extending outward nearly to the axillary margin; above, to about the second intercostal space; below, to about the fifth space; to the right, a little beyond the median line. This region of dulness was sharply outlined, and over the upper portion of it a very loud pericardial friction sound was heard over a circumscribed area. A loud double murmur was heard at the apex of the heart, and at the angle of the scapula, left side, a single, systolic murmur. The respiratory sounds in front over the area of dulness, were absent; behind bronchial breathing was heard over a small area at the middle of the lung, near the spine. This was also dull on percussion. There were no râles in the chest in front or behind. The right lung was normal; other organs normal.

A diagnosis was made of mitral valvulitis and pericarditis with effusion. The pulmonary signs heard posteriorly in the left lung regarded as due to pressure. The treatment was salicylate of soda in full doses, digitalis and small doses of morphine.

I saw her again five days later. A striking improvement had taken place both in the general condition and in the local symptoms. The pulse now ranged from 90 to 104. The temperature had gradually fallen, and on the day previous to my visit it had been normal both morning and evening. Pericardial friction sounds were still present, but not so distinct as at the first examination. There was only a single murmur at the apex, but this was transmitted to the left and heard distinctly behind. The area of dulness anteriorly was much smaller and respiratory murmur in the region more distinct. A few râles were heard in front toward the margin of the axilla, and behind where formerly there had been pure bronchial breathing the lung was filled with moist râles, indicating that probably the signs previously present had been due to a pneumonic consolidation and not to pressure. A few coarse râles upon the right side.

The general improvement in all the symptoms continued for nearly a week after which time she was regarded as convalescent; but on Feb. 13th, without any apparent cause the temperature again rose to 102.5° and with this there was cough, dyspnœa and sharp thoracic pain. I saw her for the third time the following morning and made out a small area of pneumonia at the extreme base of the left lung behind. Examination of the heart showed that a good deal of dilatation had already taken place. The apex beat was one inch to the left of the mammary line and three-quarters of an inch below the level of the nipple. The area of cardiac dulness, however, did not extend beyond the border of the heart.

No pericardial friction sounds were heard and fairly good respiratory murmur was now present at the upper part of the left lung in front, where in her first acute attack there were no breathing sounds. There was no evidence that any increase in the heart inflammation had occurred, but the rise of temperature and other symptoms seemed entirely explained by pneumonia. The child had become greatly wasted, very irritable and extremely anæmic.

From this second attack she rallied quite rapidly; the temperature gradually fell but did not quite reach normal. The pneumonia resolved in a few days.

On February 19th. a third exacerbation in the temperature occurred without any evident explanation. I saw her again on the 21st and was surprised to find improvement both in her general condition and in the heart in spite of the persistence of the fever which ranged from normal to 104.5°. The lung had cleared with the exception of a few short râles; the apex beat was now an inch to the left of the nipple, and one and one-fourth inches below. Pulse, 110 to 120.

I did not see her again until March 2nd, but the irregular high temperature had continued It did not seem possible that this could be due to the cardiac lesion, as the physical signs indicated steady improvement here. The spleen could now, for the first time, be made out by palpation and an examination of the blood showed many malarial organisims. Quinine was now begun in full doses; improvement soon followed and the temperature gradually fell to normal. From this time convalescence was uninterrupted.

I did not have another opportunity to see the patient until eight months later, when she was brought to my office, January 15. 1899. I had, however, been kept informed by Dr. Risk of her condition. The same general plan had been followed as in the previous case. She was kept in bed for two months after all febrile symptoms had disappeared. This did not seem to affect her general health unfavorably; not only did her heart improve, but she gained steadily in weight, so that when she got up she weighed six pounds more than before she was taken ill. During June she was allowed to sit up part of the day and take short drives; and during July, for the first time, she was allowed to walk. The exercise was carefully and gradually increased during the summer, and by the late autumn she was able to go up and down stairs without the slightest discomfort, and seemed to be in every way normal.

The summer was spent in Vermont at the elevation of 1,000 feet without inconvenience, and she improved steadily throughout the season. At no time during the summer was there any return of the rheumatism or any symptoms complained of referable to the heart. At her visit to my office she came skipping into the room in the highest of spirits, with rosy cheeks, and in every way was in excellent physical condition, hardly recognizable as the invalid of the previous winter. The pulse was 100, full and regular. The apex beat in the mammary line, and ½ inch below the level of the nipple. A soft systolic murmur was heard at the apex. but it was faint, not loud enough to be heard behind. No increase in cardiac dullness; no pericardial friction sounds. Lungs normal.

She did not suffer the slightest inconvenience on account of her heart, and it was difficult for one seeing her at this time to believe that she had had so serious a lesion as the one observed only a year before.

November 13, 1899.—She came in for examination at my request. With the exception of a slight diarrhœa last summer she had not been ill since the last note. She leads quite an active life rides her pony, runs about and plays pretty much like other children. No return of rheumatism and no cardiac symptoms since the last examination. The position of the apex beat is unchanged. It is only by the most careful auscultation that any murmur can now be detected. It is very faint and is heard only in the neighborhood of the apex, not at all behind. The pulse is full, strong and regular. The child's development is in every way most satisfactory. Her general health is excellent; she has in fact been better and stronger since than before her serious illness.

I have given the histories of the the cases considerably In detail in order that the type of the disease might be appreciated. The strain upon the heart during the attack of pneumonia in the little boy of three years (Case I) was so great that I did not expect him to recover. The second patient, though at no time so desperately ill, was for a week in a very critical condition, and her cardiac lesion seemed to be quite as serious as that of the little boy.

Had either of these patients been allowed to get up soon after the acute attack I feel very sure that the outcome would have been very different. As an illustration of such a practice I will give the history of another patient whom I saw last year.

Case III.—*Endocarditis complicating pneumonia; death seven months after the initial attack from progressive cardiac failure.*

G. O. female, eleven and one-half years old; first came under my observation December 24, 1898. No rheumatism in the family; the patient was the robust member of the family and previous to July of the same year had never been seriously ill. At that time she had an acute lobar pneumonia of the left lung and was seriously ill for two weeks. The pneumonia was chiefly in front; involvement of the heart was recognized during the acute attack. She was, however, kept in bed only two weeks. In a few days she was allowed out to drive; and shortly after she was taken to the Adirondacks where she spent the balance of the summer. She was allowed to walk about the place, but not to engage in active exercise, and spent most of her time in a boat.

Dr. S. K. Bremner, who examined her early in August, soon after she came to the Adirondacks, reported the condition to me at that time as follows: The apex beat was over an inch to the left of the nipple and a very loud mitral regurgitant murmur was present.

Her general condition during the summer continued apparently good. But in September she had a short malarial fever; and in November a mild attack of grippe. During both of these she was a good deal prostrated, making a tardy recovery, and suffered from considerable cardiac embarrassment. Except when acutely ill she had been allowed

to be up and about the house, and drove out nearly every day, even up to a few days before my first visit. She also walked somewhat upon the level, but seldom up and down stairs. Early in December a slight dropsy of the feet and ankles was first noticed.

At my first examination there was noted a heaving cardiac impulse the apex was 1¼ inches to the left of the mammary line and two inches below the nipple. The heart's action was labored and the sounds somewhat confused, but there was a loud systolic murmur at the apex, which could be heard all over the chest in front and over the left chest behind. Near the apex there was heard over a small area a presystolic murmur. The pulse was 120 and somewhat irregular; the face considerably and the feet slightly œdematous; lungs normal; spleen and liver not enlarged; no fluid in the peritoneal cavity.

For the first ten days under absolute rest and the free administration of digitalis some improvement occurred and the dropsy disappeared; but after a short interval in spite of everything that was done the case went steadily downward. The dropsy in the face and lower extremities returned early in February; the liver and spleen became very greatly enlarged, and she finally died with general anasarca from cardiac exhaustion and pulmonary œdema on February 22nd, two months after I first saw her and a little more than seven months after from her first cardiac symptoms. No autopsy.

This girl belonged to a very healthy family, was of strong constitution and lived in the very best surroundings. She was a highly nervous, strong-willed child and was very difficult to control.

These cases teach their own lesson, and comment seems almost unnecessary. I firmly believe that in few things are physicians more blameworthy than in allowing children to get up as soon as acute symptoms have subsided, after they have suffered either from acute cardiac inflammations or from general infectious diseases (especially diphtheria, scarlet fever or typhoid,) of severe type and in which the heart muscle has been affected. The possibilities of harm which may result from this practice are certainly not appreciated. Nor, on the other hand, are the possibilities of improvement or the extent of recovery appreciated, where the plan of treatment above outlined has been followed.

—*Archives of Pediatrics.*

LONDON MEDICAL SOCIETY.

At a meeting of the London Medical Society, the following officers were elected for the year 1900:—President, J.D. Balfour (Superintendent Victoria Hospital); Vice-President, H. T. H. Williams; Secretary, W. M. English; Corresponding Secretary, H. A. Stevenson; Treasurer, W. J. Weeks. The acting President, Dr. R. Ferguson, gave a resume of the work done during the past year, the most prosperous year in the history of the society. Rev. Dr. Saunders read a paper on "Hypnotic suggestion in Medicine." Dr. H. A. Stevenson exhibited a uterus containing a large fibroid, with a dermoid cyst of each ovary, size of large orange, patient of Dr. H. Meek, patient made a good recovery.

ON THE AETIOLOGY OF THE NAUSEA AND VOMITING OF PREGNANCY.*

By David James Evans, M.D.

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The purpose of this preliminary paper is to advance a theory, which seems to be founded on sound physiological grounds, of the causation of the nausea and vomiting of pregnancy.

In a brief review of the somewhat copious recent literature of the subject, I have been unable to find anything which leads me to think that the theory which I wish to advance is other than new.

The vomiting of pregnancy is usually divided into two classes, namely: the mild or physiological; and the severe or pathological, hyperemesis gravidarum. The mild form, with which this paper particularly has to deal, occurs in the vast majority of cases of pregnancy.

In a brief paper it is impossible to refer to the various theories which have been advanced from time to time in explanation of the origin of this vomiting of pregnancy. That there exists in the pregnant woman a condition of exaltation of nervous tension all are agreed A few consider that the origin lies in direct irritation of the medullary centers by toxic material circulating in the maternal blood. Others explain the irritation as originating peripherally, either in uterine contractions or in abnormal states of the gastro-enteric tract.

Exactly how conditions about the uterus give rise to peripheral irritation has been variously explained. Mechanical pressure of the enlarging uterus on the nerves of the pelvic ganglion; stretching of the muscle fibers of the uterus causing pressure on the nerves; versions and flexions of the pregnant organ; ovarian irritation from uterine pressure; diseased conditions, as endrometritis, cellulitis, endocervicitis, etc., have all been advanced as factors in the production of this irritation. Gastric ulcer, gastritis, and various abnormal conditions of the large and small bowel have also been advanced as possible sources of the peripheral irritation.

Dirmoser,[1] as the result of a careful examination of the urine in six cases of hyperemesis gravidarum, comes to the conclusion that intoxication is the cause of the severe symptoms. As to the production of the intoxication,[1] he advances the following elaborate hypothesis: "Through the increase in size of the uterus the motor nerves of that organ, the sympathetic and the vagus, are at once mechanically irritated. They being irritated, bring about respectively contractions of the uterus and of the stomach. Irritation of the vagus increases, however, the secretion of the gastric juice and also the mucous production, so that the alkaline mucous frequently neutralizes the gastric juice, which is often observed in cases of hyperemesis. These changes form a predisposition to the formation of toxines, which is still more increased by the atony of the whole intestinal tract, which is present in all severe cases." Dirmoser thus considers that the uterine contractions are the result of irritation

*Read before the Montreal Med.-Chir. Society, Nov. 19th, 1899.

due to mechanical pressure of the enlarged uterus upon the motor nerves of that organ, and that the contractions so produced are evidently pathological.

I cannot do better than quote verbatim the summary of the present views as to the explanation of vomitus gravidarum which is given in *Progressive Medicine* for September, 1899.[2]

"The possible ways of explaining vomitus gravidarum are: (*a*) Direct vomiting may be produced by an abnormal condition of the vomiting center, due either to the irritating effects of chemical substances, toxines, etc., circulating in the blood, or to nutritional changes caused by varietions in blood pressure in the medulla, or to other circulatory changes. (*b*) Reflex vomiting may be produced by sufficiently powerful impulses sent from the genital tract, causing an irritation of the vomiting center. (*c*) Vomiting may be produced by a combination of influences affecting the vomiting center both directly and reflexly. (*d*) The psycopathical factor may be important, as in the vomiting of hysteria.

"We must assume that in two-thirds of all cases of pregnancy there exists an increased irritability of the medullary centers, due wholly or in part to one or both of these two factors: (*a*) Nutritional changes, resulting from circulatory disturbances; (*b*) poisoning from toxic elements circulating in the blood. We must further assume that this abnormally irritable vomiting center is acted upon by afferent impulses sent from one or more of a variety of peripheral sources. Among the most important causes of reflex irritation are an incarcerated retorflexed uterus, abnormal adhesions of the uterus, pathological changes in the uterine wall, resulting from endometritis, pelvic, congestion, constipation, gastritis, etc. To these sources of afferent impulses we must add the psycopathic or hysterical condition, which is of especial importance in the more serious cases."

A brief consideration at this point of some of the more important conditions which are present in the gravid uterus will make my further remarks more intelligible. Tarnier has said, "All the properties of the gravid uterus exist in a rudimentary state in the nulliparous woman, and gestation only exalts them." Pajot has expressed this by saying, "Pregnancy does not create any new properties."

The principal properties possessed by the uterus are, sensibility, irritability, and contractility.

The *sensitiveness* of the non-gravid organ to pressure is easily demonstrated in making the bimanual examination. Pain is frequently complained of when the uterine sound is inserted. That this sensitiveness is increased in pregnancy is apparent to any one who has practiced abdominal palpitation for diagnosis of the fœtal position, The manual pressure exerted in expressing the placenta frequently gives rise to severe pain. Women occasionally complain of uterine tenderness, especially those cases where the liquor amnii is deficient and the fœtus exerts direct pressure on the uterine wall.

The *irritability* of the uterus is frequently markedly increased as the result of pregnancy. This fact is well know even to the laity, who not infrequently make use of their knowledge to induce abortion by introducing foreign bodies into the vagina to set up powerful uterine contractions.

The *contractility* of the uterus is its most important property. Tarnier and Chantreuil[3] state that the uterus possesses the power of contracting even in a state of vacuity, citing by way of example that it may be noted in certain women at the period of menstruation, especially in cases of dysmenorrhœa. It favors the expulsion of clots and débris and is probably the origin of the severe cramp-like pains so often complained of by women at these periods. They state very strongly that these contractions of the uterus occur at regular intervals throughout the whole period of pregnancy.

Hirst[4], Davis and others also draw attention to the fact that uterine contractions occur regularly throughout the whole period of pregnancy, and Hirst states that during pregnancy the contractility is always most marked at the menstrual epoch, hence the frequency of abortion at these times. After the fourth month these uterine contractions are manifest in placing the hand upon the abdomen over the fundus. The uterus can be felt hardening under the hand. In the earlier months these contractions can easily be made out by the bimanual method, and are frequently made use of in diagnosing the fact of pregnancy when the uterus is found to be enlarged.

Contractility is more markedly developed in the muscle cells of the body of the uterus, particularly towards the fundus, while it is less pronounced in the cervix. The cervix seems to be in a state of tonic spasm, while the contractions of the uterus are clonic. That this contractility of the uterus is independent of the will and yet capable of being affected by the emotions, all are aware. Uterine contractions may be set up reflexly by irritation of the breasts, and particularly of the nipples. It is probable that any powerful cutaneous irritation, as the application of heat and cold, may act in the same way.

The nerve-supply of the uterus is derived chiefly from the hypogastric and ovarian plexuses of the sympathetic system. Cohnstein[5] has shown that the uterine ganglia have to a certain extent an independent action, like the cardiac ganglia. There exists, as has been proven repeatedly, a center in the medulla oblongata which presides over the uterine contraction. Thus the uterus is provided with a nerve apparatus to preside over contraction, very similiar to that of the heart.

That uterine contractions occur at more or less regular intervals throughout gestation may then be taken as proven. The question then arises: What is the purpose of these painless rhythmical contractions of the uterus.

It is very probable that by these contractions the uterine circulation is accelerated, and thus the uterus supplements to a certain extent the action of the heart throughout pregnancy. In considering the circulation of the blood in the gravid uterus the thing that probably attracts particular attention is the arrangement of the venous system. The

veins, especially in the middle coat of the muscular uterine walls, are simply enormous sinuses whose inner coat alone remains, being in direct contact with the muscle-cells. Thus these uterine veins are converted into large contractile sinuses, in which, no doubt, there must occur considerable retardation of the blood flow.

If I may be permitted, I would for the purpose of illustration compare the gravid uterus to a sponge held in the hand under a flowing faucet. As the sponge becomes filled and distended with water the hand is contracted upon it, and so the sponge is squeezed and emptied more or less of the water it contains according to the force exerted by the hand in squeezing it. When the hand is relaxed, the sponge again fills up, and so on. This, I take it, is very much what takes place in the gravid uterus.

In studying two cases of pregnancy with vomiting which I have attended recently, my attention was arrested by certain phenomena which seemed to me to be explicable only on one hypothesis.

In the first of these cases, a primipara, æt. 40, nause anda salivation occurred throughout the whole period of gestation. At intervals the vomiting was extremely severe, at one period the prostration resulting was so intense as to make it seem probable that the pregnancy would have to be terminated by the induction of abortion. I noticed that the severer attacks of vomiting occurred at certain intervals, which, on questioning the patent, I found corresponded to the menstrual epoch. On one occasion I precipitated a severe attack of vomiting when examining the breasts; on another a vaginal examination produced the same result, though on both occasions the patient had been fairly well for several days previous.

In the second case, also a primipara, the patent complained that her breasts were excessively tender, particularly the left, and on my examining this breast the patient was seized with a severe attack of vomiting. A vaginal examination produced the same result. The uterus was found to be unusually sensitive, and the left ovary was very tender. This patient had previously suffered from dysmenorrhœa, the pain being chiefly located in the left side. While talking with this patient I noticed that the nausea occurred in paroxysms, separated by a considerable interval, in which she said she felt perfectly comfortable. The patient, as long as she was kept quiet, either on a lounge or in bed, rarely vomited, though she still suffered from paroxysms of nausea. She noticed that after walking about the paroxysms occurred more frequently, and very often terminating in retching.

The hypothesis which to my mind affords the best explanation of the phenomena observed in the two cases mentioned is that rhythmical uterine contractions were the primary cause of the reflex irritation which resulted in paroxysmal nausea and vomiting.

In the first case, where the attacks of vomiting were more marked during the menstrual epochs, the uterine contractions were probably

accentuated, and at the same time the general nervous tension was exalted, hence the increased severity of the symptoms at these periods. My examinations in both cases acted by increasing the uterine contractions and thus precipitated the paroxysms.

The theory which I wish to advance is that the essential exciting cause of the nausea and vomiting of pregnancy is frequently the physiological contraction of the muscular fibres of the gravid uterus.

The contractions of the non-gravid uterus which follow the introduction of the uterine sound not infrequently result in reflexly inducing nausea and vomiting. Intra-uterine applications are frequently followed by cramp-like pains, which are associated with nausea and vomiting. In dysmenorrhœa nausea and vomiting sometimes occur, the explanation being that the effort of the uterus to expel clots and débris reflexly irritates the vomiting center in the medulla. Giles[7] has noted that in the primipara there is a close and constant connection between the sickness of pregnancy and previous dysmenorrhœa. Vomiting is frequently noted in the first stage of labor, and usually occurs at the acme of uterine contraction.

The over-distended bladder, in its effort to contract, not infrequently reflexly induces nausea; similarly the stomach sets up the same reflex. In ileus an analogous reflex action occurs. Appendicular colic is frequently associated with nausea and vomiting.

Thus we see that any hollow viscus in contracting may set up reflex nausea and vomiting.

The fact that the paroxysms of nausea occur most frequently on first assuming the erect position in the morning has led the laity to apply the term "morning sickness" to this condition. This has also been noted that if the patient, before rising, partakes of a light breakfast, the sickness is not so apt to occur.

"Morning sickness" is, I think, susceptible of explanation: There is probably more or less of an accumulation of effete material in the maternal blood in the morning, which leads to increased irritability of the nervous centers. The effect of assuming an erect position is to bring about a determination of blood to the plevis. This engorgement of the plevic circulation probably leads to more energetic uterine contraction, which, acting reflexly upon the center, produces nausea and vomiting. When food is taken before rising it is probable that considerable blood is determined to the stomach, hence less will find its way to the plevis when the patient stands erect, so that the uterine contractions are apt to be less vigorous than when the patient rises fasting.

It is probable that the beneficial effects of nerve-sedatives in the treatment of this distressing condition are obtained not so much by inhibiting the uterine contractions as by soothing the irritable nervous system and thus controlling the reflex.

I would summarize my conclusions as follows:—

1. There exists more or less of a rhythm in the paroxysms of nausea and vomiting in pregnancy.

2. There must also exist a rhythmical exciting cause for these paroxysms.

3. There is a rhythm in the contractions of the uterus which occur throughout pregnancy.

4. The essential exciting cause of the paroxysms of nausea and vomiting of pregnancy is frequently the physiological contraction of the muscular fibers of the uterus.—*Amer. Jour. of Obstetrics.*

SURGICAL HINTS.

All hypodermic injections may be rendered less painful, and be more readily absorbed if the active substance is dissolved in saline solution instead of plain water.

In nursing women, every inflammation of the breast and nipple must be considered as having a bacterial origin, and should be treated like any other local infectious process.

In alcholic coma always investigate the bladder. It is apt to be very full. If there is no stricture the urine would drain itself out after a while, but if prostatic or other stricture would exist a rupture of the bladder might take place.

In administering chloroform to patients who have to be placed upon the side, as in some obstetrical operations, etc, place them on the right side if possible, as the heart's action is much better under chloroform in that position, than it is when the left chest is compressed against the table or bed.

In men, the intense scalding during urination in acute gonorrhœa may be relieved by urinating with the penis immersed in a vessel containing hot water. Women with gonorrhœal urethritis may similarly be relieved by directing them to urinate while taking a copious hot douche, or while sitting in a warm sitz bath.

After having succeeded in passing a catheter through a stricture, after some trouble, it is better to wait for some hours before withdrawing it. If you do not you may have just as much trouble in introducing another, whereas a catheter left in situ for a day or so will dilate the canal enough to allow you to pass the constriction quite easily.

In ankylosis resulting from disease still existing, passive motion is harmful. The only manipulation allowable in such cases is for the purpose of placing the limb, if possible, in the most useful position. In deforming arthritis, for instance, knees should be straightened out and elbows bent to a rather acute angle, under anæsthesia. Then use rest, with splints and ice bags to prevent inflammation.

In women climacteric hemorrhages sometimes occur as the result of vasomotor disturbances or of arterial sclerosis. It sometimes happens that several such hemorrhages take place prior to the final establishment of the menopause. Women at this period always attribute such an occurrence to the change of life, but the surgeon must invariably examine the patient on account of the strong chances of cancerous trouble.—*Int. Jour. Surgery.*

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PEPTONES IN TYPHOID FEVER.*

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I desire to present to you the notes of two cases of typhoid fever in which I used peptone feeding with marked benefit.

The first case was that of a man aged 21 years, a patient in Toronto General Hospital during the fall of 1892.

He had passed through a severe attack of typhoid and after a few day's convalescence had relapsed.

His temperature was high (104°) from the begining of the recrudesence with low muttering delerium, carphologia, subsultus, uncontrollable vomiting, pulse almost imperceptible, mouth everywhere lined with sordes. The patient would slip down into the middle of the bed if left for even a few minutes.

He was emaciated to an extreme degree and with the prospects of another three weeks of fever, offered but small encouragement to his attendants. He was given large amounts of stimulant of all kinds, alcoholic and otherwise, but without any perceptible influence on his pulse or condition generally.

To make matters worse, on the second or third day of his relapse a pneumonia developed, and patient apparently lost the power to swallow.

From the first, owing to the vomiting, nutrient enemata of milk had been used to supplement what was being taken by the mouth, but the inability to swallow left us wholly dependent upon rectal feeding.

Four ounces of peptonized milk were given every two hours and retained fairly well for a day or two, but with no improvement in the condition, until the idea of giving completely digested proteid in large amounts was suggested. The whites of ten hard boiled eggs were finely minced and mixed with a pint of an artificial gastric juice made of pepsin and HCl in due proportions and kept at body temperature in a water bath for some hours until no trace of egg was left on inspection.

This quantity was administered every twenty-four hours with an equal amount of thoroughly peptonized milk, being injected high up into the rectum.

* Read before the Toronto Clinical Society.

All stimulants, etc., were given with the enemata and a few miniums of Liq. Opii. Sed. were added when the rectum became irritable.

Improvement was marked in a comparatively few hours and owing to the irritable condition of the stomach nothing was given by mouth till about the third day.

The further progress of the case was uneventful, the disease terminating favorably in about three weeks.

The patient put on flesh even during the period of fever, so that when convalescence was established he was apparently fatter than when first admitted.

The second case is a boy about 11 years who is in the Tor. Gen. Hosp. at present convalescing.

I saw him about the fourth day of his attack and had him removed to the hospital.

He was in a very poor condition, low muttering delerium, carphologia, subsultus, tongue dry and brown, pulse very small and dicrotic, with involuntary motions and very marked distension, all symptoms of grave import occurring so early in the disease.

He was purged and given salol and stimulants, alcoholic and otherwise, freely, but it was impossible to get him to take more than a few ounces of milk daily. Two or three days after admission he developed a troublesome, hacking cough, and began to have attacks of cyanosis during which his pulse became almost imperceptible and his limbs cold.

There was marked consolidation of the base of the right lung and some crackling rales heard over the left, behind. In addition to what he took by mouth nutrient enemata were ordered every four hours, consisting of two ounces of milk and one egg, the mixture being peptonized for some hours.

In thirty-six hours the cyanosis disappeared with a corresponding improvement in the other unpleasant symptoms.

This patient, like the last, was greatly attenuated at the beginning of his illness and had every appearance of poor resisting powers.

Now, while the administration of nutrient enemata is a very old story, the point I wish to make is that when such a procedure becomes necessary the constituents of the enema should be essentially nitrogenous, and that more especially so in febrile diseases.

The large intestine is adapted only for the absorption of water and with it substances in solution. There being no villi or lacteals, the absorption of fats is practically nil, hence the proteid and sugar of the milk are the only elements to be counted on.

Now, milk contains on an average about four per cent. of proteid and as one must be careful to make the enema as small as possible to ensure its retention, particularly in typhoid, the quantity is wholly inadequate to nourish the body under ordinary circumstances without allowing for the rapid tissue destruction produced by the disease.

The large residue of unabsorbable fat in milk also undergoes change and the fatty acids produced irritation of the rectum and rapidly make it intolerant of further feeding.

In the first case pepsin and HCl were used to digest the egg and this possesses decided advantages over the pancreatic extract in that the products of pancreatic digestion if not soon absorbed are prone to undergo further splitting up with the formation of leucin and tyrosin and consequent lessening of its nutritive value and increase of rectal irritation.

Another reason for the increase in proteid aliment is that it is the destruction of the albuminous constituents of the tissues which is most serious in the severe cases.

The fats may be burned up with greater impunity and can be replaced later on, but the heart muscle can only be sustained by nitrogenous material.

Again, the large intestine being devoid of those structures which ensure rapid absorption as well as those secretions which tend to prevent decomposition, it is most important that all substances presented to it for absorption should be in as complete a state of solution as it is possible to make them before their injection and for this reason I think that albumen which has been precipitated (as in hard boiled egg), and subsequently dissolved completely by pepsin is more reliable than otherwise, as here inspection is sufficient to inform one when the process is complete; whereas with egg albumen or caesin in an unperceptible condition one is deprived of that simple test and has no guarantee that the ferment used has been, or will ever be instrumental in producing the required change.

SUBCUTANEOUS ABSCESSES IN CONNECTION WITH A BACILLUS IN THE CIRCULATING BLOOD.

BY THOMAS BRADLEY, M.D.

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T. P., aged 21 years, has been troubled for the past ten years with what he describes as boils. For the first two or three years they appeared only in the winter, and in successive crops. The favorite situations were the arms, thighs, face and neck. Between eruptions at one or more of these situations, patient was never entirely free from them. After about three years in this condition the time of year seemed to have no influence, eruptions appearing at any season. This continued until two years ago when there was an eruption covering the whole body. At the same time the right fore-arm and arm were swollen to a size nearly half as large again as normal with marked involvement of the epitrochlear and axillary glands. The cervical and submaxillary glands were slightly enlarged. After two months stay in the hospital he was discharged as cured. Shortly, however, the disease repeated itself.

I saw the patient for the first time in Dec. 1898. His left hand was immensely swollen with a discharge of pus at the base of the proximal phalynx of the little finger. The left fore-arm was also much swollen and had two or three points of discharging pus. In most cases these points of breaking down and sloughing were more depressed than the ordinary boil. Others however were not unlike the ordinary furunculus, beginning in a raised angry looking spot and terminating in gangrene of

the central part which was eventually cast off in the form of a slough. For some days before a visitation the patient complained of an intense heat over the whole body. He was dull and indisposed to any exertion. This condition alternated with severe headaches. He was always, but especially at this period troubled with constipation. Other than the above the patient appeared to enjoy fair health As regards urinalysis, of which a number were made, there was nothing abnormal excepting on one occasion when pus was found. The blood was also examined, and found to be in a normal condition.

The patient had been steadily under treatment for two years before coming to me. I learned from a prescription he showed me, that he had been taking iodide of potash and bichloride of mercury. Suspecting syphilis I again went into his history carefully but could find no trace. I put him on arsenic, strychnine and calcium sulphide. He was ordered to take a bath every night followed by a sponging over the whole body with carbolic acid (1 in 60). Under clothes were changed frequently. Calomel in 4 gr. doses followed by salines every 5 days was also ordered. After one week patient was feeling better and boils had nearly all disappeared. Ten days later, however, he was much in the same condition as he was when I saw him first. The hand was even more swollen and painful. Hereupon I made a culture on blood serum from the pus of one of the abcesses that had not yet been exposed. I inoculated another tube of blood serum with a specimen of the blood. After 24 hours in the thermostat a very free growth was present in both tubes. Cover-glass preparations of the specimen taken from the culture inoculated with the pus showed a mixed growth viz:—staphylococcus pyogenes aureus and a bacillus, to be aftewards described. The culture from the blood showed the same bacillus and a few cocci. In like manner another specimen of blood was examined revealing in an apparently pure state the same bacillus as was present in the last specimen I referred the matter to Dr. H. B. Anderson and he advised more strict bacteriological technique, stating that it was possible that the organism found was a contamination. A good hypodermic syringe was selected and allowed to remain in a solution of carbolic acid (1 in 10) for ten minutes after which it was boiled in a strong solution of bicarbonate of soda for 45 minutes. The patient's forearm was washed with soap and water then sterilized with carbolic solution (1 in 20) and finally with ether and alcohol. I thoroughly washed my own hands and sterilized them in carbolic acid (1 in 20). Blood was withdrawn by means of the prepared hypodermic syringe from the median basilic vein and injected into liquified agar and plated at once. After 24 hours in the incubator there were innumerable colonies, of different shapes and sizes, viz:—round, branched and beaded, and on the level or above the surface of the media. Ten different colonies, taking as many different forms and as far removed from each other as possible were examined, revealing in each case the same micro-organism. Again and under every precaution I inoculated slant blood serum with blood in the following order 2 from 1, 3 from 2 and so on to 4. Each time more liquification occurred. No. 1 showed a brownish purulent scum, No. 2 slightly liquified and No. 4 thoroughly liquified holding in suspension a

whitish flocculent material. Each tube contained the same organism but it became smaller and apparently less abundant at each inoculation. Another agar plate culture was made and examined for colonies 18 and 24 hours later. At the former period none were visible, but at the latter there were many and of the same appearance as those in first plate. A number were examined microscopically and showed the same bacillus. From original agar plate I innoculated beef broth. After 24 hours' growth in thermostat media contained few bacilli but those present were remarkably well defined. After 4 days, organism was yet quite distinct and more numerous, and the medium contained a white flocculent material clinging to the glass at junction with the bouillion. The bacilli vary much in length from rod-shape to filaments. The rod-shaped are large and more or less uniform in length and thickness. The filamentous structures have not, as yet, under examination shown any movements, although all other characteristics correspond with the short rod shaped forms. In many cases they appear to have transverse markings, many of which are distant from each other the length of one of the short rod-shaped bacilli. In a hanging drop examination the bacillus shows four distinct movements. There appears to be a fifth movement but I am not certain as to its real existence. Its movements are rapid, more so than those of the typhoid bacillus. In one case it moves across the field in a zig-zag manner throwing its body at different angles from right to left thus:—motionless, ∧∨ moving,—motionless. In another movement it partially turns upon itself first to one side and then to the other, thus:—motionless, ⌒ ⌣ ⌒ moving—motionless. The third movement is snake-like. The last distinct movement is one in which the bacillus turns completely upon itself, forming what looks like a coccus, after this fashion:—motionless ● ● ● ● moving,—motionless. The doubtful movement appears to be up and down or a turning end for end in a regular manner without bacillus quitting its ground.

From original agar plate culture, I inoculated agar slant and blood serum.

The following is the result of examination: In agar tube, bacilli were from ordinary size to very small and thin. Taking two of the same length, one was thick and the other thin. Many appeared to be turned upon themselves. In blood serum tube, organism appeared to be divided into segments, others probably thicker at one end than at the other, and some of ordinary size.

I inoculated another series of tubes as follows:

From original agar plate culture to bouillion; from bouillion to blood serum; from blood serum to blood serum.

The following is the result of examination: In the specimen from bouillion the organism was shorter than usual. The first blood serum showed bacilli varying in size from the smallest to the largest yet seen. Many appeared broken up and others turned upon themselves. In the second blood serum culture organism was more uniform, but also varied in size.

Three agar plate cultures were now made in order to dilute the growth, and so examine the different colonies with more accuracy. The procedure was after the ordinary method. Examination proved the

following: No. 1 plate—Seven colonies, although differing in size and shape, showed the same organism, differing only in a few of the colonies as to length. No. 2 plate—In ten colonies the same bacillus was present, but varied more in size than those of the first plate. In one case the longer, or filamentous, were run together into clumps. This variety is, when present, always associated with the short rod-shaped. No. 3 plate—In five colonies the same bacillus was present.

The following is the result of 44 hours' growth in thermostat on litmus milk, gelatin and potato:

Litmus milk—Bacillus was of medium size and media of a dirty white color. In 48 hours (but 4 hours later) media showed slight coagulation, and was almost clear white in color. After 72 hours there was marked coagulation, and in 19 days nearly half the media was so involved. Coagulation never increased after this time, but the remaining part of the media became like muddy water in appearance.

Gelatin—Bacillus slightly shorter and thicker than usual. There was a light gray or dirty white discoloration of the upper portion of the media.

Potato—Few bacilli, but of ordinary size. The media was furrowed. The parts between the furrows were covered with a creamy scum, while the furrows themselves were dry and brownish.

Stab culture was made out on each of the following: Gelatin, agar, glucose agar and gelatin agar.

Gelatin—After 24 hours at ordinary temperature of a room there was no change in medium. After seven days there was no liquifaction, but a light gray discoloration extended over the course of the stab. The media was slightly split (probably due to drying). The organism was large and spores were present.

Agar—Medium slightly split and the whole surface covered with a scum. In the course of the stab there were two or three air bubbles.

Glucose agar—At entrance of the stab there was a slight elevation, which was of a deeper color than the medium. The surface of the rest of the media presented a thick and dirty cream-like color, which was continued over the whole course of the stab. There were gas or air bubbles in the course of and at some distance from the stab.

Gelatin agar—The surface of the medium was much the same in appearance as that of glucose agar. There was a slight funnel shape along the line of inoculation.

In any of the above cases it is doubtful whether there was any growth below the surface of the media, excepting in glucose agar.

Probably Grows Without the Presence of Oxygen.

A stab culture in agar was made and liquefied agar poured over it. I also inoculated a blood serum tube and applied Buchner's method. These were allowed to remain in the thermostat for 24 hours before examination. In each case the bacillus was present, but I think in not so healthy a condition as under ordinary circumstances.

Action with regard to Hydrogen Gas.

Inoculated agar, bouillion and blood serum, and placed them in an atmosphere of pure hydrogen. At the end of 27 hours the surface of the

agar was covered with a slight scum. The bouillion and blood serum presented no appearance of growth. The three tubes were then placed in the incubator. After 24 hours all except the bouillion showed a growth both from the appearance of the media and under microscopical examination.

Carbolic Acid.

A solution of carbolic acid and boullion (1 in 125) was inoculated and placed in the thermostat. After three days there was a growth, but at the end of the fourth day the organisms were dead.

Gives Reaction for Indol.

It was twelve hours after the addition of sulphuric acid and sodium hyposulphite to the media (Dunham's solution) before any reaction was noticeable. The smaller the amount of the media tested, the deeper the color or reaction.

Action Towards Different Staining Reagents.

It stains by Gram's method and with all the ordinary reagents, but especially well with gentian violet.

Action on Rabbits and Guinea Pigs.

Inoculated a guinea pig subcutaneously. In 24 hours its temperature per vaginam was 101⅓° and there was a profuse diarrhœa. The animal was very dull and apparently quite ill. The temperature remained between 100 and 102° for six days. After 10 days the animal died. The autopsy revealed nothing abnormal, further than more than an ordinary amount of fluid in the peritoneal cavity. Boullion was inoculated with specimens taken from the peritoneal and pleural cavities, also from the liver and heart. There was no growth. Selected a large, plump rabbit. Its temperature per rectum was 99° (considered normal). Injected a hypodermic syringe full of a growth on boullion 24 hours old into the posterior auricular vein. The temperature ranged as follows:

	Morning.	Evening.
Third day after inoculation	99⅗	101
Sixth " "	102⅘	102⅘
Seventh " "	103⅘	104
Eighth " "	102	102⅗
Ninth " "	102	102⅕°

When the temperature was at 104° (seventh day) there was a profuse diarrhœa. Three weeks after this inoculation inoculated the same rabbit subcutaneously in the flank with a boullion culture 72 hours old. In 24 hours the animal had a temperature of 103½° and much diarrhœa. At the point of infection there was a semi-solid, raised mass about the size of a chestnut. Twenty-four hours after the swelling was of an elastic feel. The temperature was 103⅕° and diarrhœa continued. One week after flank inoculation the temperature was 102½°. For one month after this the fever fluctuated between 102½ and 100°. Six weeks later it was 99½°. There was now merely a scab remaining at the point of inoculation; the diarrhœa had ceased, but the animal was markedly reduced.

Five months after the first specimen of blood was examined another was examined, revealing in every respect precisely the same bacillus in the one case as in the other.

In September, 1899, the patient's left hand, forearm and axillary glands were extensively involved. The hand was swollen fully double its normal size. In the palm was a hard, non-movable mass about half the size of a hen's egg. Over the posterior surface of the forearm a number of abscesses had become confluent and were surrounded by a large purulent surface of a deep red discoloration and much induration of the underlying tissues. A hard mass was present at the bend of the elbow, making flexion almost impossible. At the outset of this attack the whole arm became suddenly powerless and remained so for two days. One month later right axilla, arm and forearm were tremendously swollen. Axillary space was so much filled up that arm could not hang by the side of the body. The sensation conveyed on palpitating was something like the grasping of a base-ball. Nodular masses could be felt throughout.

Although publishing the above as a clinical report, I may say, from the data here given, I have not been able to find a corresponding bacillus under similar conditions or otherwise.

Abdominal Pain.

There is no symptom that is more deceptive than a pain situated in some part of the abdominal cavity. All the intra-abdominal conditions which give rise to pain may present this symptom over the immediate site of the affected region, or the pain may be of so vague a character as to afford little or no exact indication, and, finally, it may be referred to a part of the abdominal region situated at a distance from the part which is affected. It must also be remembered that some active inflammatory disturbances, such as appendicitis, occasionally arise without causing any pain whatever. Moreover, we know that even severe abdominal pain may occur as a consequence of disease which in no wise implicates the abdominal cavity. This occasionally occurs in pleurisies, and the writer within a few days has seen a case of severe infectious pericarditis in which the pain was referred to the umbilical region, and appeared to be of an excruciating character. In appendicitis the pain is not infrequently referred to the right side In cancer of the stomach or duodenum the pain often varies greatly as to its situation. In ulcer of the stomach the pain is often referred to the back, at the site of the lower dorsal spines. In various forms of intestinal obstruction the pain is often of so irregular a nature as to form but an exceedingly slight indication of the location of the trouble. In hepatic inflammation we are all aware that disturbance in the right lobe usually gives rise to pain in the right shoulder, while trouble of the left lobe may give pain in the left shoulder, owing to those filaments of the phrenic nerve which enter the liver. We are also familiar with the pains in the thigh and in the testis due to renal calculus, and with the remarkable variety of pains seen in aneurism of the abdominal aorta. Abdominal pain is therefore so puzzling a factor, and its absence such an insignificant one, in disease affecting the abdominal cavity, that we can but seldom rely upon it alone in making a diagnosis.—*International Journal of Surgery.*

OPERATIONS FOR SOFT CATARACT.

BY DAVID WEBSTER, M.D, NEW YORK.

Case 1. Congenital Cataract.

The youngest person I ever operated upon for cataract was Robert Jones, of Schaghticoke, N.Y. He was brought to me at the Manhattan Eye and Ear Hospital on Oct. 30th, 1889, and I needled his right lens for congenital cataract on the day that he was nine weeks old. There was a history of ophthalmia neonatorum, and it was not noticed that the pupils were white until the child was two weeks old. It was proposed that we should get rid of the cataract in the right eye before we did anything to the left. On Oct. 31st I punctured the centre of his right anterior capsule under cocaine. A weak solution of atropine was dropped into the eye, and it was then closed by a compress of absorbent cotton, held in place by strips of adhesive plaster. There was no redness of the eye during recovery from this operation, and the child was discharged on the fourth day. On the 18th of December following, I needled the lens a second time. The same treatment was pursued and the child was again discharged on the fourth day without inflammatory reaction. On February 7th, 1890, I did a third needling, and three days later (Feb. 10th) I did a hook operation, removing some of the capsule and some of the remains of the lens, leaving a partially clear pupil. A few days later the child was taken home with the understanding that he was to be brought again to the hospital in April to have the other eye attended to. I got a letter from his mother instead, saying that the child had died of congestion of the brain. He died on March 18th, and the eye was "white like the other," and the pupil was clear black up to the time of his death. The cause of the congestion of his brain was unknown, but his mother thought that the excitement produced by the operations on his eye had something to do with it.

Case 2. Soft Cataract.

Mrs. L. B., aet. 21, was admitted to the wards of the Manhattan Eye and Ear Hospital Sept. 21, 1887, with soft cataract of the left eye, and good projection. The history was as follows: In August, 1887, she was very ill from a miscarriage. It was followed by a high fever, and she had six convulsions. To relieve the convulsions, ether, chloroform, etc., were administered. She is sure she could see as well with that eye as with the other before this illness. She noticed that she did not see well with the left eye immediately after her sickness. The cataractous lens was needled under cocaine anaesthesia. There was no reaction and she was discharged at the end of ten days. On March 19th, 1888, I did a second operation, making a free cut across the lens, horizontally, with a knife-needle. No reaction following, she was discharged on the third day. On May 4th, I again freely needled the lens for the third time. The eye remained perfectly quiet after the operation, so that, on May 9th, a fourth needling was done. I operated on the eye for the fifth and last time on Sept. 24th. No reaction followed, and on Sept. 26th, the patient was discharged with Vision = 20/50 with + 12. D.s. combined with + 0. 75 D c. axis 60°.

There was no cataract in the other eye, nor was there any history of traumatism. There seems to be no reasonable grounds to doubt that the

cataract, in this case, was the direct result of the severe illness which followed the patient's miscarriage.

Case 3. Soft Cataract.

Jefferson Hicks, aet. 4 years, was brought to me at the Manhattan Eye and Ear Hospital on April 12th, 1889, with mature cataract in both eyes. The cataracts had been first noticed when he was two years old. Having dilated his pupils with a weak solution of atropine, and having placed him under ether, I made a small incision in the centre of each of his anterior capsules with a knife-needle. On the 14th both eyes were somewhat more red than normal, and the little fellow had developed an apparent suppression of urine. The house surgeon attempted to pass a catheter but failed to enter the bladder. Some urine escaped soon after, however. On April 15th the child was restless and constipated, and had a temperature of 99¼°. A laxative was administered, but it failed to operate. On the 16th an enema was given, and it relieved the bowels and the bladder also. He recovered steadily after that, and on April 19th, a week after the operation, he was discharged. He was brugoht back on May 31st, and a second needling was done on each eye. There was no reaction following these operations, and on June 8th the *fundi* could be seen with the ophthalmoscope, and the optic disks looked atrophic. The patient was discharged with clear pupils.

Possibly the suppression of urine was due to the *atropine*, a drop of which was put into the eye operated upon once daily.

Case 4. Soft Cataract.

Gordon Hicks, aged two and a half years, a brother of the last patient, was brought to the hospital at the same time, and had the same history, namely, that his lenses were observed to be cataractous when he was two years old. His lenses were needled on the same day and with the same precautions as his brother's. Five days later (April 17th) it was noted that his cataracts were absorbing very rapidly, and that he was running about the room without colliding with the various articles of furniture. He went home with his brother on April 19th, and was brought back with him on May 31st. His cataracts were on that day needled again, and he was discharged on June 8th with clear pupils. As no note was made of any ophthalmoscopic examination in his case, I infer that he could not be kept quiet enough for that purpose.

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Incontinence of Urine.

Incontinence of urine in the female due to lack of power in the vesical sphincter is relieved, according to the *Journal of Medicine and Science*, by minim doses of tincture of cantharides well diluted.

According to the *Journal de Médicine de Paris* for July 2, Dr. Spaak of Brussels, has obtained excellent hemostatic results from a mixture of two parts of chloroform with 100 parts of water. This mixture is said to rapidly arrest bleeding after tooth extraction.—*Med. Times.*

Oil of erigeron, one to five drops every three hours, is valuable in uterine hemorrhages.—*Med. Times and Register.*

THAT RUNNING EAR.

By Perry G. Goldsmith, M.D., C.M., Belleville, Ont.

One need offer no apology for introducing this subject, since the condition is met with more frequently than any other aural affection and is more frequently disregarded than any other disease an ear may have. How frequently we hear mothers say, "it is only a gathering and will soon stop, anyway I don't believe in stopping it too quickly." Not only do the laity but, I am sorry to say, an occasional medical man declare that it is better not to meddle with these cases as the child will grow out of it. How the growing process takes place will be referred to later.

The object of my paper is to point out as well as I can the immediate and remote consequences of chronic suppurative catarrh of the middle ear, and to give a brief resumé of the various methods of procedure adopted in its treatment. This subject has been threshed out very thoroughly of late years, so I fear I shall be unable to add anything new, but I shall speak from an experience with a large number of suppurating ears which I was enabled to follow closely for some months at the Central London Nose, Throat and Ear Hospital, owing to the kindness of Dr. Dundas Grant. I am also able to draw some conclusions from a large number of private cases, a few of the most interesting of which have been added at the conclusion of this paper.

Frequency.—Barr says that 30-35 per cent. of all ear diseases belong to class called suppurative catarrh, 5 per cent. to the acute and the remainder to the chronic form. In the annual report of the Central London Nose. Throat and Ear Hospital I find that of the 2,953 cases of various ear troubles, 1,695 suffered from suppurative catarrh of the middle ear or of conditions directly due to previous suppuration. McNaughton Jones Stewart giving an analysis of 2,953 cases, places 1,136 under the head of suppuration of the middle ear. Various other authorities give practically the same percentage.

Causes.—Predisposing.

(1) Adenoids.
(2) A pre-existing discharge thought to be cured and with or without a dry perforation.
(3) Extension of disease from the external auditory meatus.

Exciting:—

(1) Exanthemata and influenza, especially scarletina complicated with nasal diphtheria.
(2) Extension through Eustachian tube.
(3) Action of cold both through the external auditory meatus and by causing the occurrence of acute adenoiditis.
(4) Traumatism—blows; foreign bodies and ill skilled efforts to remove them.

To emphasize the importance of diseases of the nose and pharynx as causes of middle ear mischief, I may quote from the report of the Central London Throat and Ear Hospital, 1886, where in 4,946 cases of nose, throat and ear trouble, 2,944 cases of aural mischief were ascribed to the nose or naso-pharyngeal vault.

BACTERIOLOGY.—Recent investigations, especially by Löwenberg, Netter, Zangal and Moss show that otorrhoea may be due to or at least be associated with certain micro-organisms acting either through the eustachian tube or the external auditory meatus. The chief organisms are :—

(1) Streptococcus pyogenes ;
(2) Staphlococcus pyogenes albus and aureus ;
(3) Frankel's pneumonoccus ;
(4) Friedlanders' pneumo-bacillus ;
(5) Tubercle bacillus.

Division.—Acute—during first three months of the discharge. Chronic—after three months. This is an arbitrary division but a practical one.

SYMPTOMS :—

I. Acute suppurative catarrh of the middle ear.
(*a*) A sense of fulness and pressure in the ear.
(*b*) Pain varying in severity from a slight discomfort to a distracting agony which may mask the ear affection entirely, especially in children.

Pain, however, may be entirely absent and nothing but a feeling of fullness and discomfort is noticed.

(*c*) Various disturbances of the digestive, and circulatory centres.
(*d*) Presence of discharge, usually bloody at first and followed by almost immediate relief of pain.

II. Symptoms of the chronic form.

The marked characteristic in this division is the almost entire absence of symptoms other than the presence of discharge which may be markedly intermittent and of varying consistency, and have an odor of all degrees up to a terrible stench. There are, however, symptoms for which the patient seeks relief other than the discharge.

(1) Impairment of hearing. This varies greatly. The amount of discharge and its duration does not give any accurate data from which we can say the amount of hearing our patient has.

(2) Tinnitus—A very annoying symptom but fortunately not nearly so frequent as in non-suppurative cases. Very frequently, however, tinnitus comes on permanently after the discharge has stopped and the membrane has closed up.

(3) Cerebral disturbances,—headache, nausea, giddiness or hemiplegia owing to intra cranial involvement.

(4) Pain—intermittent attacks of neuralgic pain over the corresponding side of the head owing to various degrees of mastoiditis.

(5) Facial paralysis—owing to carious involvement of the bony canal which carries the facial nerve.

COURSE.—This running ear may get well in a few days and the mucous membrane of the tympanic cavity be completely regenerated or it may within one week involve the mastoid cells and meninges. Fortunately, however, it most frequently stops short of the mastoid and leads to chronic thickening of the tympanic mucous membrane, destruction of the drum-head, caries and disintegration of one or more of the ossicles,

disease of the attic and mastoid antrum and later to formation of cicatrical bands which by binding the drumhead to the inner tympanic wall, seriously impair the auditory function.

Thus it is that a running ear may be either a comparatviely trivial affection or a symptom of a very grave and serious condition.

That the membrane lining the mastoid antrum is always involved in these cases has the endorsation of Dr. Dundas Grant of London and many others, but the process generally stops here. After having seen a large number of chronic running ears in which a radical operation was performed, I have no hesitancy whatever in stating that in all cases of old running ears the mastoid antrum is full of foul debris, the removal of which *alone* can *cure* the discharge.

The acute form may progress to mastoid involvement with wonderful rapidity. A case illustrating this occured in a patient under the care of Dr. Percy Jakins of the Central London Nose, Throat and Ear Hospital. The patient was a healthy-looking man 65 years of age, who had a discharging ear producing an earache six days previously. In this instance by firm pressure over the mastoid, pus welled out of the ear. On the other hand one knows of innumerable cases where a running ear has existed for ten, twenty or thirty years and no great inconvenience ensued. A case illustrating the length of time it may take to reach the meninges is shown by another patient of Jakins' where a patient with an otorrhœa of twenty years presented himself with nausea, headache, giddiness, unsteady gait and partial hemiplegia. In this case two ounces of foul pus were removed from the brain, a rapid recovery ensuing.

Some people appear to be very fortunate, for one frequently reads of cases or actually sees a case himself where in a chronic suppurating ear, not only has the mastoid been involved but the pus has worked out through the bone and burrowed into the superficial tissues of the neck, opening here and being cured.

Prognosis.—If ever a guarded prognosis as to the outcome and duration of a case be given, it should be here. There is no symptom or group of symptoms which is indicative of the course the case will take; the apparently mild case at the beginning may lead to cerebral complications, while that case marked by the greatest constitutional disturbance at first may rapidly respond to treatment.

Treatment.—To give any routine treatment applicable to all cases is not only difficult, but useless. Each case must be treated according to the conditions present. The general rule which says to find the cause and remove it is the rule to follow before discharge.

(1) Very gentle hot water irrigation of the external auditory meatus is beneficial in relieving the pain. A mild non-irritating antiseptic may advantageously be added.

(2) Eustachian inflation is not advised by many noted authorities It seems to me to be indicated, since we generally have a partially blocked tube and a tympanum filling with serum. Before using a catheter, however, the pharangeal vault should be well cleansed and the mouth of the eustachian tube mopped well with some absorbent wool to remove that plug of mucus which is so frequently present.

(3) Thoroughly cleanse the external auditory meatus, since should we have a discharge it may be simply aseptic serous exudation, and may be rendered septic by influences acting from the meatus.

(4) Leeches in front of the tragus not only relieve pain, but deplete the engorged internal vessels. Leeching is particularly indicated in otitis media due to influenza.

(5) Administration of a brisk saline purge, preferably mag. sulph. in small and repeated doses.

(6) I do not think it is advisable to give morphia, as it masks the symptoms. Should the pain demand it, the drum head should be frequently inspected, in order that if there is to be a perforation it will be made by the surgeon.

(7) Poultices are bad, and usually dirty. They tend to produce softening and ulceration of the deeper parts. A compress of hot Lotio Acidi Boraci is not so bad, but the fashion of filling the ear with warm mush filled with micro-organisms is not only unscientific, but is real dirty.

(8) If the membrane bulges, and particularly if a yellowish spot be detected, paracentesis of the membrani tympani is the only sensible action. Not only do we thereby relieve the pain and deplete the engorged vessels, but we assist nature in what she is endeavoring to accomplish.

The amount of relief a patient may receive is shown by the following case: Gentleman aged 56, suffering from an intense ear ache of 12 hours duration to which he had been applying a bran mash. The severity of the pain was so great that when I saw him he was walking up and down his dressing room nearly distracted. After thoroughly cleaning the external auditory meatus I incised the bulging drum head and applied two leeches to the tragus, and within one hour he was sleeping quietly.

Regarding eustachian inflation in any manner after the appearance of discharge, opinions differ greatly. Personally, I am opposed to its adoption for at least 48 hours following the perforation. There are many remedies used as drops in the ear for the relief of pain, some of which are highly recommended but in my hands I must say all have been of but little use.

Barr advises 2 grs.—℥i. of morphia, another 3 grs.—℥i. of atropia sulph, Hemitson carbolic acid and glycerine. The alkaloids of cocaine and atropia in oil have been highly recommended, especially for influenza cases. Politzer uses 20-30 minums of equal parts of chloroform and olive oil, applying it on lint which is then placed over the ear.

Domestic remedies are as numerous as they are ludicrous, running from the juice of chewing tobacco (humanized extract) to *hen* oil.

Blisters have a two fold action, make a sore ear sorer and mask any mastoid involvement. The treatment would be very incomplete without immediate attention to the nose and naso pharnyx.

Treatment immediately after the discharge:—

Simple cleansing and retaining the asepticy of the canal is generally all that is required. Small strips of sterile gauze greatly facilitate drainage and in a measure prevent external infection. If the surgeon has incised the drum-head and the discharge remains aseptic the incision generally heals within 48 hours, though should it close and patient again

have pain re-opening will be indicated. Avoidance of cold and alcohol should be advised as well as daily cleansing of the naso-pharyngeal vault. Although there are numberless cases of acute purulent otitis media which without any treatment whatever get well, yet there is usually left a deranged condition of the mucous membrane lining the tympanum and ossicles, which gradually in the course of years brings about interference with the conducting function of the ossicles, and deafness which requires a great deal of time and patience to improve and in which even then relapses and steady progress towards almost total deafness is not uncommon.

Treatment if the Discharge Persists with Treatment of Chronic Suppuration of the Middle Ear.

More gentle catheterization with some soothing oily and antiseptic vapor as menthol and parslene and gentle syringing of the meatus with a mild antiseptic thoroughly drying the canal is usually sufficient. It is not of great importance to use an antiseptic here as in nearly all cases the perforation is so small that practically none of the liquid reaches the tympanum. Should the discharge be very copious syringing every two or three hours may be necessary but usually every four hours is quite sufficient. I attach very great importance to the surgeon himself using the syringe at least once a day as is then seen that no pent up secretion remains and the canal is thoroughly dried and the gauge strips which are of great service in this stage are properly placed.

In the event of this treatment failing to completely stop the discharge we must use bolder measures. Here again attention must be directed to the naso-pharyngeal vault. Douches of solvents for the mucus, and astringent applications to the orifice of the eustachian tube are usually indicated. Again let me urge the importance of thorough removal of all adenoids, even the pad which is so often situated on the roof of the pharnyx and the cause of the œdema of the pharyngeal orifices of the eustachian tube.

The discharge may be quite foul and stained with blood. A thorough examination of the drumhead is very essential and noting especially where the perforation is situated and its size. If the perforation is small and apparently there is not free and easy drainage do not hesitate to enlarge the opening. One may be surprised how rapidly a case will get well when this is done (case No. 3.) Should the opening close up rapidly as it is prone to do it should be again opened as well as any secondary bulgings. If the perforation be high up and so situated that an incision downward is not free from risk a secondary opening in the posterior lower quadrant will fulfil the indications. In cases where we have disease of the attic we frequently have a perforation in Shrapnell's membrane. Here we may use the attic syringe and expect a tedious case.

Granulation and auralpolyps are frequently found in those very chronic cases. We often see a large polypus which has worked its way out through the perforation acting as a sort of plug to the discharge within the tympanum, or again the tympanic cavity may be completely filled with smaller granulations. In these cases it seems to be the general

practice if the growth be large enough to snare it off otherwise use caustic and spirit. Yet one must not too lightly snare an aural polypus as is illustrated in a case occurring in the practice of an eminent London aural surgeon last summer when in an old ottorrhoea case a large polypus was thus removed. Septic meningitis immediately followed and death ensued in a few days. This case suggests the remark that it is questionable as to the advisability of removing aural polypi through the external auditory meatus but preferably to do so from their origin the mastoid antrum. But practically all cases will continue to be attacked from the outer ear; so in whatever manner whether by snare or forceps, a preliminary course of antiseptics should be used to eliminate sepsis as well we can and thereby add to the safety of our operation.

Of cauterizing agents probably those most frequently used are phenol, chromic acid, silver nitrate and the galvano cautery. Phenol is probably the best since, while possessing as much escharotic action as is necessary it is not followed by any inflammatory reaction. Frequently however in cases of small granulations the use of absolute alcohol with or without sulphate of zinc is followed by good results.

Should we have granulations existing on the posterior wall of the bony canal or on the posterior superior especially with sagging down of the superior wall we must strongly suspect mastosid involvement. Some authors say in such cases the mastoid is always involved. Here the case demands a radical operation at once delay being useless and dangerous. In cases where we can detect roughened bone either by a cotton tipped probe or a blunt one, we have a very tedious case to deal with.

At times the character of the discharge assists us in diagnosing caries. The discharge is frequently thin, brown and copious, especially when a sequestrum exists while persistence of foul odor after thorough use of antiseptics points strongly to caries. Presence of asseous particles is of course pathognomonic.

Granting we have no evidences of granulations or dead bone what course of procedure are we to adopt. Here again each case must be treated according to the conditions found. The general rule above mentioned which says remove the cause is the one to follow. If the discharge be associated with naso-pharynygeal trouble this must be corrected especially adenoids. The removal of this apparently innocent pad of adenoid tissue in the vault of the pharnyx will often work wonders. In children when practically all have adenoids my rule is to clean the pharyngeal vault in every case where there are even slight evidences of adenoid hypertrophy previous to doing anything to the ear whatever. In many cases I have completely cured a running ear of months duration by simply cleaning the pharyngeal vault of its mass of adenoids. (Case No. IV.) Maintaining the patency of the eustachian tube and the injection of various antiseptic sprays frequently add success to our treatment. The practice of injecting irriating antiseptic liquids in any quantity through the eustachian catheter should certainly be condemned.

Now comes the use of remedies applied through the external auditory meatus. Let us consider what our object is in using remedies here. I take it to be as follows: (1) Dissolving of the discharge; (2) its removal; (3)

disinfection of the tympanum; (4) regeneration of the tympanic mucous membrane; (5) closure of the perforation.

(1) To dissolve the discharge.

In order that we may scientifically do this we must know of what constituents the discharge consists Mr. Wingrave, of the Central London Nose, Throat and Ear Hospital, after a careful analysis of aural discharges states that it consists of a small amount of mucin and gas globules, and a large amount of globulins. Then our object is to find something non-irritating which will dissolve these substances. Mr. Wingrave has found that a solution af sodium sulphate 2%, and sodium carbonate 2%, to be the only neutral salts to do this, leaving out of consideration the mucin which is but a small element. Moreover, they are practically the only neutral salts which when mixed with a solution of bisulphide of mercury will not precipitate the globulins.

(2) Disinfection, still quoting Mr. Wingrave, bisulphide of mercury in 1-1000—1-2000 solution is by far the most potent antiseptic, and does not precipitate the globulins when mixed with the above mentioned solvents. Bi-chloride of mercury used as a disinfectant forms the albuminate of mercury, a very insoluble compound. Boracic acid is used so extensively, and advised by so many authorities, that I shall devote some attention to it. That it is but feebly antiseptic and slightly astringent is universally admitted. It is only in those cases where there is a very large perforation, in reality a mere rim of drum membrane, that the boracic powder blown into the external auditory meatus reaches the tympanum. But supposing it should reach the tympanic cavity, its insolubility in serum or pus simply renders the exit of the discharge more difficult, besides acting as a mechanical obstruction to the canal. Two cases may be cited as illustrations of the dangers of the boracic powder insufflution. They are numbered A and B at the conclusion of this paper.

But boracic acid used as a very fine dusting to the tympanic cavity when free exit is present and simply a moistening of the tympanic structures remains, is admissable. Here the mere presence of a fine layer of powder may be a sufficient stimulus to ensure healing. At any rate if pulv. acid borici is used, it certainly should be used by the physician himself and a lotion of borax given for subsequent syringing since the powder is soluble in a solution of borax. In my own practice I do not use boracic acid at all, unless it be in a solution of absolute alcohol.

I attach great importance to the patient's being shown how he should use the solutions in his ear. Many patient's simply get the solution in the outer part of the canal while the bony portion is never cleansed. Again having, as they think, washed the ear out well, they will tilt their head to one side and have a few drops poured in the ear and immediately get up and place a piece of absorbent wool in the canal which succeeds, is absorbing the drops that have not run out, the tympanic cavity being left severely alone. To properly use drops, one must insist on the patient's lying down with the affected ear uppermost and while gently drawing the ear upward and backward have the medicine, previously warmed by heating the spoon, poured into the canal and allowed to remain there for at least twenty minutes. Occasionally inflating the ear by Valsalva's

method is beneficial since the air clearing the perforation allows some of the liquid to trickle into the tympanum. By careful attention to these details one will be surprised how rapidly some previously annoying case will succeed.

REGENERATION OF THE TYMPANIC MUCOUS MEMBRANE.—Here cleanliness is of the greatest importance. The use of alcohol (absolute) in varying degrees of strength with or without boric acid or sulphate of zinc is of great utility. Frequently the spirit treatment is followed by very sharp pain but this usually passes off very quickly and seldom occurs after the first few applications. Nitrate of silver in varying strengths even to an almost saturated solution is advocated by some authorities.

CLOSURE OF THE PERFORATION.—If this is not done by nature after the stoppage of the discharge the application of Blake's paper disks to the membrani tympanii may be followed by a rapid closure. Various cauterizing and stimulating applications may have to be used—the most common of which are tri-chlor acetic acid, chromic acid, silver nitrate and the galvano cautery.

But the case may not go on as we would wish though we have tried faithfully a line of treatment similar to the above. The discharge continues, with the odor greatly modified or unaffected. The course best to adopt may be indicated, I think, in a few lines. Granted we have a case of chronic suppurative middle ear catarrh which presents no acute bone involvement and in which after, say three months careful treatment there is no marked amelioration in the amount of discharge or the character of the odor we should at once resort to ossilectomy.

Should this fail to stop the discharge the clearing of the mastoid antrum and adjoining structures if necessary, after the manner of Stacke or Swartz should be done. This appeared to have been the general opinion of the members of the International Otloogical Congress held in London last August.

In conclusion, let me offer a word of warning to those who consider their patients cured because the patient says the discharge has all stopped. Frequently in chronic cases a small amount of discharge occurs which drys to the walls of the meatus and never appears externally, or the exposed tympanic mucous membrane will only give off an exudation when it too takes part in the general hyperæmia of the naso-pharyngeal mucous membrane seen in a common head cold. Careful searching with a cotton-tipped probe will render this mistake very exceptional. Let there be no moisture for three months before pronouncing the case cured, and avoid too frequent or prolonged douching, especially where there is but slight discharge, as it alone may keep it up.

ILLUSTRATIVE CASES.

I. USE OF PULV. ACIDI BORACI.—A young lady, 21 years of age, with a running ear was given one ounce of powdered boracic acid, a portion of which she was directed to blow into her ear after syringing. She succeeded in getting the powder well into the ear, as I saw when first consulted, some weeks later. Her complaint then was a severe earache

and a feeling of fullness on that side of her head. No wonder; as her external auditory meatus was completely filled with a mass of hardened boric powder. So hard was it that I could not break it up, but succeeded, by use of a solution of borax and alcohol drops, in freeing the mass, giving vent to a lot of foul pus and relief to her pain. In this case, had the surgeon seen his patient a few days subsequent to giving the powder, no trouble would have ensued, or had he ordered a solution of borax, no accumulation would have occurred.

Another case, a man 56 years of age, with acute suppurative otitis media, with copious discharge, was given pulv. acidi. boraici to put into his ear. He did so, blocking the aperture and driving the pus back to his mastoid cells, where it was evacuated.

2. Use of Irritating Antiseptics.—A young man with acute suppurative otitis media was given a strong solution of hydrarg bichlor, and later acid carbolic to syringe his ear. The week following when I saw him he had acute external otitis and an irritative pustular rash extending downwards from his ear. The stoppage of all syringing except with plain boiled water, and gauze packing was all that was necessary to remove his trouble.

3. Example of the Good Effects of Better Drainage of the Tympanum.—A lady 36 years of age consulted me for a running ear of six months' duration. On examination of the drumhead a small perforation was found situated high up in the posterior segment from which I could with a Seigles' speculum suck some thin pus. I at once enlarged the opening and in one week the discharge had stopped and never returned.

4. Good Effects of Removal of Adenoid.—Boy 12 years of age subject to a running ear of one year's duration. He had enlarged tonsils and adenoid growths in his pharynx, the removal of which was alone sufficient to cure the discharge and restore his hearing.

Use of Paper Disks.—A lady 33 years of age with a perforation in each drum-head, the discharge from which had ceased some months previously. I used disks of paper which after moistening were applied on the site of each perforation resulting in the complete closure within three weeks. The disks were changed every third day.

What might have been Avoided.—A man aged 45 consulted me for an intense ear ache of about 24 hours duration. On examination I found a very thin drum-head and a large bulging situated mostly posteriorly. As he was sitting in my consulting room chair and without any traction on the auricle, he suddenly exclaimed, "Something has broken and the pain is nearly gone." I examined again and found the canal full of bloody serum and a ragged perforation over the site of the former bulging.

SELECTED ARTICLES.

THE MORTALITY AND TREATMENT OF ACUTE INTUSSUSCEPTION.*

BY FRED. KAMMERER, M.D.,

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The subject of intussusception, especially in the very young, is a fascinating one to the surgeon, and, presenting as it does, so many points of interest from a pathological, as well as a therapeutical point of view, it has been well worked out during the past ten or fifteen years. The clinical contributions to the subject are innumerable. But, unfortunately, with a few exceptions, they are limited to a personal experience of only a few cases. This has made the collection of statistics of non-operative, and especially of operative treatment of intussusception, a very arduous labor. But the work has brought fruit, and much light has been thrown on the question under discussion.

The pathology of intussusception, barring, perhaps, its etiology, is well understood. The diagnosis is generally easy, and the condition unmistakable. The measures for its relief are purely mechanical, and have been clearly defined. The surgeon knows what he has to expect when opening the abdominal cavity for intussusception, and the numerous complications of other abdominal diseases are not present here, to tax his ingenuity, provided he has a fair amount of experience in intestinal work. Thus, every case has a value in the consideration of the subject, and large individual experience, while desirable, is not really essential.

Taking a broad survey of the recent literature of the subject, one conclusion can be readily reached. Non-operative treatment of intussusception is less in favor than formerly, and early operative interference has become more popular with the profession. This change is not due to great improvements in surgical technique during the past years, for such have not been made, but rather, to a careful consideration of the literary material at our disposal.

Of the bloodless methods, there is, I think, only one which deserves any serious consideration in the treatment of intussusception, the injection of fluids into the rectum. Manipulations of the tumor, the use of electricity, abdominal taxis, are means which may have been occasionally employed with, perhaps, some semblance of success. They are mentioned in text-books, I imagine more for completeness sake than because they ever have been methodically employed. Inflation of the rectum with air, carbonic acid or hydrogen gas, is still perhaps more in use than are the methods just mentioned. I know of one case, by Williams, in which inflation by carbonic acid was successful in reducing the intussusception and curing the patient. I, personally, have no experience with it, nor do I know of anyone else who has.

The case is different, however, when we come to consider the injection of water into the rectum. This method still has many advocates, and a number of successes are occasionally reported. We may state at the out-

*Read before the Section on Pediatrics, the New York Academy of Medicine, December 14, 1899, as an introduction to the discussion of the subject.

set, that the method is applicable only to cases of intussusception in the large intestine (the colic and ileo cecal varieties), according to Leichtenstein, in about 68 per cent. Intussusception of the small gut cannot and should not be treated by water enemata. It is true, some experiments have shown that water may be forced through the cecal valve into the small intestine on cadaver, but I do not believe, from some personal experiments made years ago, that a fair amount of pressure can be attained in the small intestine without great danger of rupturing the colon. The success of the experiment is dependent, in the healthy gut, upon so many undefinable factors, that I do not think accurate figures can be quoted. Mortimer found cracking of the serous coat of the colon when he allowed water to flow from an elevation of only five feet into the bodies of young children These are experiments on the healthy, although not living intestine. But, if the pressure which the intestine can successfully resist, without rupturing, has been shown to be an uncertain quantity in these experiments, how difficult, nay, how utterly impossible would it be to estimate the pressure which we can safely apply to a perhaps already injured intestinal wall, in cases of acute intussusception. Medical literature contains quite a number of records of rupture through an attempt at reduction by enemata, and many others have very likely never been published, Is it astonishing, then, that the tendency in all recent publications on acute intussusception has been in the direction of discouraging forcible enemata after the first twenty-four hours? Even this time limit is arbitrary. We know that in very acute attacks, changes may have already taken place at the neck of the intussesceptum after the first day, that will make the use of enemata a very hazardous proceeding. In chronic cases, on the other hand, enemata may he employed with impunity, many weeks after the onset of symptoms It is somewhat surprising, in this connection, to note that reference is so frequently made to the quantitly of water injected. This would seem to me to be a point of minor importance, as the capacity of the large bowel varies so much in different persons. It does not matter how much water is injected, but we should never allow a hydrostatic pressure of more than three or four feet in children.

The most serious objection to the use of distention, however, is our inability to recognize that reduction has really been accomplished. Barker, in his large personal experience of fifteen operative cases, reports eight in which enemata were tried unsuccessfully. Of these eight failures, two were recognized as such, but in six others, reduction had been apparently accomplished. It was only when abdominal section was done later on, that this was found not to have been the case.

It has often been said that recurrences after reduction by distention are more frequent than when reduction has been effected by manipulations after laparotomy, but I do not think that we will go wrong in attributing many of these recurrences, in the face of such testimony as Barker's, to incomplete reduction at the time. It should be said, on the other hand, that trustworthy observers have reported cases of genuine recurrence after distention. For the application of forcible enemata, I think, the following rules can be laid down:

In acute cases, an attempt at reduction should only be made very early in the case, and once only.

This attempt should always be made under complete anesthesia, with relaxed abdominal walls.

Hot water should be employed in preference to iced water, although the latter is said to have effected reduction when the former failed.

In very acute cases, the method should not be employed.

After one failure, laparotomy is indicated.

When laparotomy has been determined upon in the treatment of intussusception, the question of paramount interest to the surgeon, is that which relates to the reducibility of the tumor.

When the latter has become irreducile. important changes in the intestinal wall will have generally occurred.

The mortality in reducible cases has been shown to be less than half that in irreducible cases.

The causes of the high rate of mortality in the last instance are generally the septic condition of the intussusceptum, and the necessity of extended surgical interference.

The mechanical conditions in intussusception have often, and very aptly, I think, been compared with those, existing in strangulated hernia. They are more urgent, indeed, than in some cases of intestinal obstruction by bands and kinks, where the vitality of the intestinal wall is often not impaired. Who would think of opposing abdominal section in the latter cases? But, in the former, we hesitate because an uncertain and occasionally very dangerous proceeding now and then brings relief. Although statistics will never be at our disposal, I, personally, have the feeling that the mortality from intussusception could be vastly reduced if all cases were operated on immediately after the diagnosis has been made.

I should like to refer to a few points in the technique of laparotomy in small children. My own personal experience is limited to two cases—children of six and three months of age. In both of these, reduction was possible; in one, at the end of the third day, and in the other, during the second day. In the second case, although of shorter duration, there were found distinct signs of beginning general peritonitis at the time of operation, although the disinvaginated bowel did not show any marked lesions. The little patient died a day and a half later, after rallying well from the operation itself. In this case, I refrained from making any traction on the entering layer, as I did in my first case, and succeeded equally well by compressing the sheath a little below the point at which the apex of the intussusceptum could be felt. This seems, certainly, a safer method, for it combines pressure upon the apex with traction on the sheath, thereby lessening the force of traction.

In both of my cases I had not the slightest difficulty in exposing the intussusception through a median incision. The latter was employed, reaching from the symphysis beyond the umbilicus. If the tumor lies to one side in the abdominal cavity, some surgeons prefer a lateral incision at the external border of either rectus muscle. Treves condemns it, especially in children, but I really do not see on what grounds. If an intestine, strangulated within the abdominal cavity, is for some reason fixed, it is better, I think, to go as near as possile to the seat of trouble,

by making a lateral incision. I have had some experience in adults, that strengthens me in this view. I think the same arguments will hold in intussusception in children.

Shall we do anything to prevent reinvagination? I should hardly think so, as this is a rare occurrence after laparotomy. But if, for any reason, the surgeon fears recurrence, and is anxious to guard against it, I should prefer to shorten the mesentery by folding it in the direction of the long axis of the intestine and retaining the folds by several sutures. Fixation of the bowel itself to any part of the abdominal cavity I do not consider advisable.

The mortality of laparotomy, when reduction is impossible, is frightful. Still we cannot trust to spontaneous elimination of the intussusceptum as a means of cure, although a number of cases have ended favorably in this manner. When the abdomen has been opened, we must relieve the intussusception in one way or another. A number of operative procedures are available for this purpose:

I. Resection of the entire intussusceptum, with end-to-end suture or the establishment of an artificial anus.

II. Resection of the intussusception after longitudinal incision of the sheath.

III. The establishment of an artificial anus or of a lateral anastomosis, leaving the intussusception untouched.

The results from these procedures do not seem encouraging, and are, in part, conflicting. The establishment of an artificial anus alone, unless we are driven to it by the very desperate condition of the patient does not commend itself. Intestinal anastomosis, in other words, side-tracking of the fecal current, is not viewed with more favor by most surgeons, as it also leaves the intussusception within the abdomen, and exposes the patient to the risk of septic infection. A curious accident has lately been reported by Ludloff, as the result of this procedure. Some weeks after a communication had been successfully established the intussusceptum moved down further and closed the anastomosis, causing acute obstruction and necessitating another laparotomy, which finally led to the patient's death.

Resection, either of the entire intussusception or of the intussusceptum alone, are the methods which should be employed in irreducible cases. To which of the two preference should be given, is still an open question. Total resection was first tried, with uniformly fatal results, and was abandoned for partial resection of the intussusceptum, according to the Barker-Rydygier method. Of nineteen patients so operated on, eleven recovered. But only lately Kocher has published five cases of total resection and v. Eiselsburg four, all of which were successful.

Before concluding these introductory remarks, I would like to return once more to early operative interference in acute cases in children. We so often read and hear that children do not bear major operations well, and rapidly succumb to shock. This is, certainly, not my experience with laparotomies. On the contrary, I find that children bear these operations exceptionally well, fully as well as adults, provided there be no great loss of blood. In my two cases of intussusception in children, the age of the patients was three and six months respectively. Both

operations lasted over half an hour. In one evisceration was practised; in the other, most of the intestines were removed from the abdomen; they were, therefore handled considerably. I could instance another laparotomy in a child with atresia of the rectum, upon which I did an abdominal section two days after birth, and which I kept under chloroform for one hour and a quarter, finally establishing an artificial anus, and still this infant recovered and lived for several weeks. I could further instance, in older children, the successful removal of large renal tumors, more especially at the hands of Dr. Abbe. Barker, who has, perhaps, the largest personal experience in the operative treatment of intussusception in children, does speak of the fact that they bear the operation as well, or even better than adults. We can avoid hemorrhage with almost absolute certainty, during these operations and shock, as the result of manipulations of the intestines ought to be much less severe in children than in adults with a well-developed nervous system.—*Archives of Pediatrics.*

THE CAUSE AND CURE OF CONVULSIONS AFTER LABOR.*

BY A. K. BOND, M.D.,
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The occurrence of convulsions in the adult, an event always of grave import, is never more alarming and discouraging than immediately after the termination of labor. If it take place during the later stages of labor, the physician has at least the comforting probability that it is due in some way to the child's presence *in utero*, and that delivery, either natural or artificial, will cause the cessation of the convulsive tendency. If it occur after labor has ended, he can ascribe it to no such physiological irritant, but is in the dark as to both its causation and the proper means of relief, and is oppressed, at this time which should be full of happiest anticipations, with the gloomiest forebodings as to the issue of the case. Therefore, although so much has been written concerning the convulsive seizures of pregnancy and the lying-in chamber, I make no hesitation in presenting to you the following case, which exhibited the disorder in its gravest aspects, yet terminated in full health; with some references as to the possible causation and prevention of such attacks.

The patient, a healthy-looking woman of 23, in whose home I had for some time been family physician, and whose domestic surroundings were of the happiest description, the older people taking all unnecessary care from her shoulders, came under my care on March 7, 1898, eight months after her marriage; being pregnant thirty weeks, as reckoned from the beginning of the last menstrual period. She stated—and I have never known her to be untruthful or to exaggerate facts—that she had never taken a doctor's prescription in her life; had never had any disease except measles; had never had greater disturbance at menstrual periods than could be met by resting a little; had never had leucorrhea nor any sign of dropsy. She had during her pregnancy had a little nausea on

* Read before the Baltimore Medical and Surgical Association, November 13, 1899.

two or three occasions, and sometimes vomited. For two months she had had occasionally, on lying down, a twitching of lower limbs which would compel her to sit up, when it would pass away. She had to take aperent pills two or three times a week. She slept well; appetite in last two weeks not so good. Urine at the date of this first visit was normal, color natural, subacid, specific gravity 1010; cold nitric acid gave no cloud; microscope showed no sediment at all. In fine, my investigations of the patient, fortified by her general appearance, made me think I had an ideally healthy parturient to deal with.

The only possible source of danger lay in the rather small build of the patient. On May 12 I made external measurements of the pelvis, finding the interspinal 9¾ inches, that between crests 11 inches, the external conjugate 7½ inches, or a deficiency of about a half-inch in each. Vaginal examination was refused. The child's head was well fixed in the pelvis, the buttocks up near the gall bladder. The patient had no dropsy; passed urine which looked normal; had normal appetite and sleep; daily stools; felt no discomfort anywhere in body; walked out each evening.

As the date of expected labor passed (May 17) I felt some anxiety lest an overgrown baby might, in the probably somewhat narrowed pelvis, cause serious parturition trouble. On the evening of May 26 I found labor in progress. The head, in left occipito-anterior position, had not engaged deeply, as in normal first pregnancy, but was movable at the pelvic inlet. Though there was little amniotic fluid, the uterus reached high to the ensiform cartilage. There was a distinct souffle heard over both sides of the lower uterine segment. The patient lay propped up on pillows, unable to lie flat. (This high uterus, vessel souffle, and discomfort I suspect all pointed toward a large child). The fetal heart beat normally at 140. The first stage was carried through by the uterus without considerable aid from the abdominal muscles and without excessive pain. The lower parturient canal was dilatable, with soft, moist walls. The cervix was thin and distensible. The urine was free; the bowels had been moved daily by the pills till labor came on, and the patient considered the movements quite satisfactory, having been warned of the importance of this daily evacuation. The patient repeatedly vomited bilious matter throughout the whole of the first and second stages of the labor—a symptom which I disliked, but which I thought might be due to the pressure of a large child on the upper bowel.

At 4 a.m. the cervix was wholly dilated and the bag of waters projected sausage-shaped into the lower vagina. The pains became less frequent, the patient sleeping between them. I broke the membranes, and the pains became stronger and more frequent. The head came down with excessive slowness, in normal position and well flexed, until the scalp parted the vulva during the pains, showing a scalp area of about two and a half by one inch in diameter. It retired well between pains, came strongly down with them, but, while it ceased to make headway, the patient's agony increased and became continuous between the pains. I tried to reach the chin with finger in the rectum, but even with scalp parting the vulva the head seemed to the rectal finger endlessly long,

and I could not, after thrusting in the whole finger, reach beyond the hairy scalp, and so could not use it in aiding delivery.

At 6 a.m. I found the fetal heart beating irregularly at 70. Dr. Hundley kindly giving his advice and chloroforming. I delivered the child with forceps, putting three sutures into the resultant perineal tear, which reached to the rectal muscle and about two and a half inches upward into the vagina. The head was very large and covered with a permanent suit of very long hair. The family reported child's weight at 12½ pounds. He is still a finely thriving and very vigorous child. The mother had very little bleeding during delivery, and none afterward except normal lochia. Her uterus contracted well, her pulse and temperature were good. The whole labor difficulty was apparently due to the very large size of the child's head and the small pelvis, which might, however, have let a smaller, softer head pass easily.

At 4 p.m. of this same day I was summoned in haste, as the mother had had a convulsion. I found that she had complained of headache during the middle of the day, but had slept off and on naturally. She told me later that the spell occurred because she "could not bear headache." At 4.30 p.m. the temperature in axilla was 100.3°, pulse 120 and hard, respiration 28. I drew off the urine at this time, finding it very abundant, acid, of normal color, specific gravity 1010, containing neither casts nor cells under microscope, but giving, both with the cold nitric acid and with the heat and acid tests, a very slight opalescence of albumin. This seemed to me to be, not the albuminuria of nephritis, but that following convulsive states. The convulsion had been a full one, with tongue-biting. She remembered only the twitching of the right arm with which it began. I gave her a hypodermatic of morphia one-eighth of a grain, atropia one-three-hundredth of a grain.

At about 6 o'clock Dr. Hundley saw her with me again. We found her conscious, with persistent headache. It seemed to us that the kidneys and parturient tract were not at fault, but that there must be an acute intestinal poison of a nervous system worn out with a hard labor. We gave morphia one-quarter of a grain, atropia one-one-hundred-and-fiftieth of a grain hypodermatically, and directed that thirty grains of chloral and forty grains of potassium bromide should be taken every two hours, beginning at 8 p.m. Dr. Hundley then returned home. Under these remedies the convulsions returned, seven or eight occurring between our consultation and midnight. All were general and violent, and at one time there was a "status epilepticus" (consciousness not returning between the convulsions), which yielded to chloroform inhalation. Vomiting occurred from time to time, so that it was uncertain how much of the chloral mixture was retained. At 11 p.m. (a convulsion having occurred after the chloroform had restored consciousness) I bled at the end of each elbow, as had been agreed on at the consultation, but, being inexpert in the practice, got altogether not more than three ounces of blood. This bleeding did much to soften the pulse and helped to quiet the tendency to spasms. I believe there were no convulsions after the bleeding.

Believing that the patient would not be safe from the convulsive tendency until free bowel tendency was obtained, I had given at 7.30 p.

m. a half-drop of croton oil in sweet oil on the tongue, and repeated this dose at 8 p.m. Later I had placed five grains of calomel in powder on the tongue. At 1 a.m., the convulsions having ceased, but the condition of the patient still threatening their return, I gave to the now conscious patient a drop of croton oil in improvised bread pill on the tongue, and at 4 a.m., the stomach having quieted, a strong vegetable cathartic pill. At about 6 a.m. the bowels acted gently for the first time, with a foul-odored passage, and two or three easy passages followed at intervals during the forenoon. The headache and nausea hardly recurred at all after this purging, and it seemed to render permanent the good effect of bleeding. I kept up a gentle aperient action with less powerful drugs during this and the following day, the temperature standing about 99½°, the respiration being about 20, and the pulse 108 and still slightly hard and nervous.

On the third day the milk came freely in full breasts, and she thenceforth for many months wholly nourished her vigorous child on the breast with great satisfaction to both parties. The urine continued free and seemed in every way normal to the attendants. From the fifth day for about two weeks there was a temperature rise, which was considered by me and by an experienced adviser to be a simple "surgical fever" from the laceration of the cervix and perineum, and from a tear, made apparently by the forceps blade, running along the side of the vagina near its roof from a point close by the vulva to the cervical region. It is separate from the perineal tear, Under antiseptic washing of cervix and vagina the temperature soon came to normal as the parts healed. The lochial discharge was at no time offensive. A year after this confinement I met the patient and was much pleased with her vigorous appearance. She was feeling perfectly strong and looked a rosy-cheeked, healthy girl.

Reflections upon the Case Presented.—There are two points in the case which seem worthy of especial notice. First, the causation of the attacks. I think it is pretty well settled that for convulsions in the adult (I am not sure that this is not true of epilepsy, which is not now under consideration) there must be usually at least two coincident causes: one, which predisposes the nervous system to excessive action; the other, an immediate, exciting cause. The predisposing cause is, I think, not usually able of itself to bring on a convulsion, as it is a comparatively long-existing condition and the nervous system has gotten used to it. This predisposing cause may be an inherited state of nerve tissue or of nerve nutrition; or may be an acquired irritation of the nerve centres, as a chronic inflammation, the disturbance left by an old wound, the retention materials of a long-standing nephritis, the unwholesome state involved in chronic alcoholism, or some other blood-polluting or nerve-exhausting cause of considerable duration.

When to this predisposing cause the immediate cause is added, a convulsion occurs, and convulsions continue to occur as long as this immediate cause acts, when they cease and the patient goes back to his chronic state with its original symptoms, having another onset of convulsions only if the immediate cause again comes into play while the predisposing cause still obtains. Neither the predisposing cause nor the immediate cause can of itself, as a rule, occasion convulsions. If this is

true, as I believe it is, it is an extremely important fact as concerns the relief of the convulsions, as I will explain when I speak of treatment. Among immediate causes may be classed extreme pain or agony, (perhaps) exsanguination by excessive blood loss, mental shock, acute nephritic disorders (perhaps), a very foul atmosphere and acute stercoremia. I have records of several cases in which the predisposing cause was nephritis and the immediate cause acute stercoremia, several others in which the predisposing was chronic alcoholism and the immediate cause the acute stercoremias of influenza, and one case where the predisposing cause seemed to be nephritis and the immediate cause the agony of a non-progressing severe second stage of labor where the head failed to engage well in the pelvic cavity.

In the case which I have now brought before you I believe that the predisposing cause was the nerve exhaustion of a severe, protracted instrumental labor, and the immediate cause an acute stercoremia. Although the grandmother and an aunt have sensitive kidneys (showing albuminuria on occasion), the patient in the history I have given shows, I think, no clear sign of nephritis. Her normal kidney and health record in pregnancy; the absence of sediment and of more than the faintest nebulosity in the abundant urine, tested after a severe labor and a convulsion; and her perfect lactation record, with return of fine general health and ruddy beauty, seem to contra-indicate nephritis. There was no sepsis from the genital tract, as shown by the wholesomeness of the discharges, the quick healing of her extensive wounds, the perfect, full lactation, the rapid return of general health. Moreover, the short interval after labor, in absence of foul discharge, pointed away from blood sepsis from this source. The patient's general nervous system was, and is, excellent in its stability. She certainly was greatly exhausted by the hard labor, as every woman must be as concerns nerve force.

As the labor was over and there was no pain nor sense of discomfort and no abnormal oozing of blood, I do not believe the immediate cause of the spasms was connected with the parturient tract or the effect of labor shock. There was no emotional strain brought to bear upon the patient after labor. The room was well ventilated, it being daylight.

There was, however, some disorder in the digestive tract, as shown by the continual bilious vomiting during the labor; and there was the expulsion of a very foul stool (coincident with marked relief from the convulsive disposition, as shown by hard pulse, headache, nausea) in a patient whose normal accumulations in the rectum had been daily removed by her purgative pills. It may have been an old decaying accumulation in the cecum, whose poisons got sudden access to the blood stream during the exhaustion and circulatory relaxation following the emptying of the uterus. Croton oil will remove such accumulations, as I have many times observed, when ordinary purges pass by them into the rectum.

The other point of interest in the case is the treatment used. Bold therapeutics is as much demanded in vital emergencies as is gentleness

in ordinary cases. I believe that with the ordinary measures advised by some text books my patient might have died. (Her only hope would have been the possible self-limitation of convulsive states, which seems occasionally to occur.) An authority of some years back, Leishman, says of postpartum convulsions: "Full doses of chloral or opium, the administration of chloroform, cold to the head, perfect rest and quiet, and the emptying of the bowels, if necessary, by a simple enema, are the main points to be attended to." Lusk, who is still an authority, and usually a wise guide, says: "In the treatment of convulsions during the child-bed period the agents should be opium, chloral, veratrum, or digitalis. Chloroform and venesection should be employed with extreme caution, if, indeed, they are ever entitled to confidence at that time." The only agent worthy of consideration in the above lists of remedies that I did not try was veratrum viride. It was mentioned by Dr. Hundley, but, having no experimental acquaintance with it, I preferred the drug in which I had learned to trust for softening of the pulse and stoppage of the convulsive status. Veratrum is certainly a drug which acts, when it acts, along very dangerous lines. It has, I learn from text books, to be vigorously pushed until heart weakening begins, and then tends to produce emesis. It is evident that the amount of such a drug absorbed from the stomach by a patient already frequently vomiting is very uncertain, and it is clear that if there was, as we believed, a poisoning mass in the large bowel, veratrum could not cure by simply lowering arterial tension. The same is true of blood-letting, which latter, if moderate, goes well with purging; and, indeed, the old-time doctors so used it. I should not care to give a strong purge after depressing the heart and pulse by veratrum. Hot baths were undersirable, as favoring hemorrhage; and high enemata were not readily attainable nor likely to be free from harm in a patient just over a hard forceps labor and a deeply sewn perineum. On careful review of the case I believe that venesection sufficient to lower arterial pressure by nerve reflex, and stopping well of exhaustion and heart weakness of large blood loss, with croton oil just sufficient to carry off the septic mass, was the correct treatment for stopping the convulsive tendency. With a less robust parturient I would, of course, use still greater care not to excessively weaken the heart. I am inclined to think that however valuable morphia may be in convulsions from other sources, in those from fecal poisoning it is either inert, of very brief benefit, or positively harmful in rendering the intestines still less ready to part with their poisonous contents.

I have determined in future, whenever I have reason to believe that a patient is on the verge of incipient labor, to advise her to take a good dose of castor oil, followed by such other simple measures as will insure a thorough cleaning-out of the large bowel. The possible bringing-on of labor at this time by the purge would be no disadvantage, and the additional security against complications of intestinal origin would compensate for the nastiness of the dose. Especially is this desirable in cases where for the daily stool it has been deemed necessary to take one of the milder aperient pills at bed time each night.—*Amer. Jour. of Obstetrics.*

DIET IN TYHHOID FEVER.

Manges has a lengthy article on this subject in a recent number of the *Medical Record*, from which we take the following:

Shattuck after arguing against the fallacy of the old doctrine of depletion in acute febrile disorders, urged that although typhoid fever was a self-limited disease, yet its long duration rendered it necessary that, inasmuch as we could not directly attack the cause of the disease, our duty was to support the patient's strength to the utmost by maintaining nutrition at the highest level. We have no fear of feeding febrile patients in other diseases, and he calls attention to the forced feeding in the suppurative fevers, whether tuberculosis or not. Furthermore, he says that no matter how we feed a patient there will be intestinal peristalsis, and the waste products must pass over the ulcerated areas. Furthermore he does not accept the old idea that relapses are due to dietetic errors alone, but that nervous excitement, undue fatigue, etc., also cause rises of temperature; nor does he believe that these factors can cause fresh infection by bacilli. Thus for twelve years, from 1886 to 1897 inclusive, three hundred and eighty cases were under his treatment. From 1886 to 1893, two hundred and thirty-three were upon exclusively milk diet, with a mortality of 10 per cent.; from 1892 to 1897, one hundred and forty-seven were upon a more liberal diet, with a mortality of 8.1 per cent. Shattuck admits that the number of his observations is small, and that other factors in the treatment, such as the introduction of hydrotherapy, may have had something to do with his better results; but one factor remains, namely, that the more liberal diet at all events did no harm. Shattuck does not advise eating everything, but he insists that we should treat the patient and not the disease, that we should feed him with reference to his digestive powers, and not with reference to the fever; and furthermore, that there is no increased danger of irritation from food which leaves no irritating residue, and which cautious trial shows is digested without disturbance. His diet includes:

1. Milk, hot or cold, with or without salt, diluted with lime-water, soda-water, Apollinaris, or Vichy water; peptogenic and peptonized milk; cream and water (*i. e.*, less albumin); milk with white of egg, buttermilk, koumyss, matzoon, whey; milk with tea, coffee, or cacao.

2. Soups--beef, veal, chicken, tomato, potato, oyster, mutton, pea, bean, squash; carefully strained and thickened with rice (powdered), arrowroot, flour, milk or cream, egg, barley.

3. Mellin's food, malted milk, carnipeptone, bovinine, somatose.

4. Beef juice.

5. Gruels—strained corn-meal, crackers, flour, barley-water, toast-water, albumen-water with lemon-juice.

6. Ice cream.

7. Eggs, soft boiled, raw, egg-nog.

8. Finally, minced lean meat, scraped beef; the soft part of raw oysters; soft crackers with milk or broth; soft puddings without raisins; soft toast without crust; blanc mange, wine jelly, apple sauce, and macaroni.

In the admirable address at the recent general discussion on typhoid fever at the last spring meeting of the New York State Medical Association, Dr. R. H. Fitz, of Boston, presented the statistics on typhoid fever at the Massachusetts General Hospital, extending from 1821 to 1899. In the course of this address, among other things, he directed special attention to the influence of diet upon the course of typhoid fever, upon the general mortality, the occurrence of hemorrhage, and of perforation:

"For the thirty years from 1839 to 1869 the diet of patients was liquid, the fluids often containing some farinaceous ingredients. From 1869 to 1879 beef tea and beef juice were largely used in addition to the milk, and from 1879 to 1899 the liquid portion of the diet has been chiefy milk. Between 1893 and 1898 the patients under the care of Dr. Shattuck [namely, the cases which have been referred to above] have received, in addition to the milk, minced meat, raw and soft-boiled eggs, macaroni, soft crackers, toast, and puddings. Patients under the care of Dr. E. G. Cutter, during a like period, have been fed on skimmed milk, buttermilk, eggs and milk, albumin-water, chicken broth, and beef juice with barley water. The mixed foods were so strained as to be freed from solid particles. During the thirty years of liquid farinaceous diet, the average mortality was 14.1 per cent. In the milk and beef-tea decade it was 16.6 per cent., although in the immediately preceding liquid farinaceous decade it was 15 9 per cent. From 1879 to 1899, among those patients using milk as the principal article of food, the mortality was 14.6 per cent., which was about the same as during the period of liquid farinaceous diet. The mortality was only 11.3 per cent., however, among the patients between 1893 and 1898, who were fed upon the liquid and soft solid diet prescribed by Dr. Shattuck. This mortality compares very favorably with that of 15.1 per cent. noted among the patients using a largely milk diet, and with a 16.6 per cent. mortality occuring among patients taking strained, starchy, and proteid fluids As regards the occurrence of hemorrhages, it was noted among patients living on a milk diet in 10.6 per cent.; among those fed on proteid and amylaceous fluids it was 16 per cent., while it was only 9 per cent. among the patients liv- upon fluids and soft solids. The inference from this comparison is that a diet of soft solids not only does not provoke an intestinal hemorrhage, but also rather lessens the tendency to this complication. On the other hand, the strained mixed diet may increase somewhat the frequency of the hemorrhages.

"The frequency of perforation could be noted with sufficient accuracy to permit comparison only in the cases reported within the last thirty years. From 1869 to 1879 the average frequency of this occurrence was 1.1 per cent; from 1879 to 1889, 0.3 per cent., and from 1889 to 1899 1.6 per cent. These differences are so slight as to make it doubtful if dietetic treatments have had any effect in modifying the frequency to these grave complications of typhoid fever patients. Of ten patients with perforation, between 1893 and 1897, five, or 2.8 per cent., were using a largely milk diet; two, or 1.8 per cent., the strained liquid diet; and three, or 3.4 per cent., were fed upon liquid and soft solid diet.

"As to frequency of relapses, careful thermometric records having only been made at the hospitals since 1869, it is possible to make com-

parisons only since then. It is to be noted that the frequency of relapses has increased from 8.7 per cent. of the decade from 1869 to 1879 to 13 6 per cent. in the next decade, and 11.3 per cent. in the last decade, namely, 1889 to 1899. This frequency may possibly, as has frequently been maintained, be due to hydriatric treatment of the disease.

"It is to be noted that relapses were rather more frequent among patients living upon a largely milk diet, since among them the ratio of relapses was 13.1 per cent.; it was 11.1 per cent. among patients living upon strained proteid and amylaceous diet, and 10.2 per cent. among the patients fed upon fluids and soft solids." Fitz, therefore in his conclusions maintains that a considerable variety in the diet may be permitted not only without detriment, but also with possible benefit to the patient.—*The Dietetic and Hygienic Gazette.*

OPERATION ON THE PHARYNGEAL TONSIL, HAEMOPHILIA, DEATH.

The history of the following case of death from hæmorrhage following the removal of the pharyngeal tonsil in a hæmaphylic will prove of interest. It is reprinted from the February issue of The Journal of Laryngology, Rhinology and Otology. It emphasizes the need for greater care in dealing with adenoid operations, than is usually displayed. Indeed it is questionable whether the surgeon is ever justified in operating upon these growths, except where the patient can at once be put to bed, as cannot be the case when the operation is performed as the private office or the outservice of a hospital. Instead of being styled a "minor" operation, the liability to accidents at the time, and, the sequelæ too often found in its train, combine to make it one which should never be looked upon as trivial. D. J. G. W.

Dr. Sachs, Hambury, reports :—

On October 10th a boy, ten years old, was sent to me for an examination of his nose and naso-pharynx. The boy complained of headache, sleeplessness, suffered often from colds, and as different remedies had not been of any avail the boy was put under my care. I found a chronic hyperplasia of the pharyngeal tonsil, septal spur in the left nostril, and a chronic swelling of the right inferior turbinated bone. I proposed first to remove the adenoids ; the parents consented, and so I operated on the child under chloroform.

The operation went off well ; the pharyngeal tonsil was cut off in one piece as large as a walnut. I always remove the pharyngeal tonsil with a modified knife, a combination of Gottstein's and Beckmann's pattern. Some time after the operation, when bleeding had ceased, the father drove home with the child. At six o'clock in the evening the parents telephoned to me to come as quickly as possible, as the child was bleeding very profusely and felt very weak. I went at once, and found

the child very anæmic, blood running out of both sides of the nose. I put tampons of iodoform gauze in both sides of the nose, and the bleeding seemed to stop; two hours later I called again and found the child still very pale, bleeding again, not complaining of any pain, only of thirst. I took the iodoform gauze away, and put fresh tampons with a weak solution of fresh ferric chloride in the naso-pharynx and the nose; when I saw that no blood came through the tampons I left. Two hours later I was called again, and was told that the child was bleeding again, felt weaker and had fainted several times. Now I told the parents that I thought the whole case very unusual. Of course one sees at times a very severe loss of blood after an operation on the pharyngeal tonsil, but always after a certain time one can stop the bleeding. When I mentioned this to the parents the mother said that six months ago the child had had a tooth drawn, and that it was very difficult for the dentist to stop the bleeding; only after four days the bleeding stopped. Once the child cut his finger, and again it was very difficult, and took a long time, to stop the bleeding; the child always taking several weeks to recover from these attacks. Then the mother told me that her father died, at the age of forty-two, of hæmophilia. He had a fatal parenchymatous bleeding of the kidney. I told the parents that I thought the child was also a hæmophile, that the case was a very serious one, and that it was very wrong on their part not to have told me all these details before the operation was performed, because under such circumstances I certainly should not have operated. The temperature, as always in these cases of hæmophilia, was higher than usual, up to 102° F. The next day we tried everything we thought advisable, and gave the child champagne, port wine, camphor, etc.; tampons with ferric chloride in the nose and naso-pharynx; transfusion of physiological solution of sodium chlorate, and also, as suggested by Heymann (Leipzig) a physiological solution of sodium chlorate, with 2½ per cent. of gelatine. But unfortunately everything was unsuccessful, and four days after the operation the child died. The child felt perfectly well the whole time, and never complained of anything but thirst; but the bleeding never ceased, and it was utterly impossible to stop it.

Veils and Red Noses

A German physician formulates an indictment of the veil as a cause of acne rosacea affecting the nose, and he relates a number of instances in which young women, otherwise in excellent health, developed this distressing condition consequent upon the habit of riding, cycling, etc., in veils. His view is that the lesion is caused by the friction of the skin against the veil, impregnated with moisture from the breath, the effect being exaggerated by the tightness with which it is necessary to attach the veil when indulging in athletic pursuits. The remedy is obviously to abandon the use of the veil or to wear it loose, anointing the nose with lanoline or other suitable lubricant. — *Med. Press and Circular.*

THE RECOGNITION OF THE POISONOUS SERPENTS OF NORTH AMERICA.

Dr. Howard Kelly (Johns' Hopkins Bulletin), has an interesting article on the above subject.

Snakes are reptiles distinguished from the frog family by the fact that they undergo no metamorphoses and do not pass through a tad-pole stage of existence. They are distinguished from lizards by possessing widely dilatable mandibles, their head bones are united by ligaments and they possess no limbs or shoulder girdle and have no eyelids and no external ear or tympanum.

The body of the snake is covered with scales, arranged in rows—the head, as in the lizards, is covered with a series of large plates of constant arrangement in the same species.

It is not always easy to determine whether or not a given animal is a snake,—for example, the Amphiuma is widely known as the "Congo-snake," yet on inspection you will discover four short, rudimentary limbs. The Amphiuma is one of the tailed Batrachians. Again the Ophisaurus ventralis—known everywhere as the "glass-snake," belongs to the lizards and is distinguished from the snakes by the solidity of the head, the well defined openings near the angle of the jaw, and the distinct eyelids. These are both harmless creatures—there are no known poisonous members of the lizard or frog families save the Gila monster (Heloderma suspectum).

Among the true snakes, Ophidians, we must distinguish poisonous from non-poisonous species. The ignorance, which leads people to destroy all snakes alike, does not tend to promote the destruction of the poisonous species, as their worst enemies are some of the harmless varieties as the Black and King snakes. Further this indiscriminate destruction tends to disturb the balance of nature by favoring the increase of small animals as toads, frogs and field mice on which they naturally feed.

There are certain differential points between the poisonous and non-poisonous forms.

The poisonous snakes of this country, except the Harlequin snake of Florida, belong to the "pit vipers,"—they possess a curious, blind depression in the fore part of the head between the eye and the nostril—the function of which has not been determined.

The "pit vipers" differ from the harmless snakes in having triangular heads with massive, maxillary development. They have fewer, large scales on the head—the increased number of small scales gives the head a warty appearance. The snake is thicker in proportion to length, has a shorter tail, and the dorsal scales are keeled. The pupil is elliptical. In the lower jaw there is a row of recurved, short teeth towards the centre of the head, and just outside of these under the lip are two, long, mucous folds hanging like veils over the powerful, recurved fangs which lie concealed. These poison fangs are shed from time to time.

Of the pit vipers there are three genera with about eighteen species – the genera are Agkistrodon, Sistrurus and Crotalus.

To the Agkistrodon genus belongs the Copperhead. The color is light chocolate, with wave-like, dark, alternating patches on the sides, the belly is yellowish. Its bite is less liable to prove fatal than that of the rattlesnake. The Mocacassin (A. piscivorus)—a water-snake is dark, greenish brown in color and is distinguished from the Copperhead by the color and the absence of the loral plate—from the Rattlesnakes by the absence of the caudal appendage.

Of the Rattlesnakes there are two genera—Sistrurus and Crotalus. The two species of the Sistrurus are S. catenatus (the massasauga) and S. miliarius (the ground rattlesnake). The bite of these rarely, if ever, proves fatal. There are two species of the Crotalids—the C. horridris or banded rattlesnake, and the C. confluentus or Prairie rattlesnake.

The Colubers or harmless snakes are more numerous—they are distinguished by their slender form, large scales covering the head, smooth scales on the body,—absence of the maxillary pit. The bite of these is quite insignificant.

An example, is the Corn snake, (Callopeltis guttalus) reddish brown in color with blotches down back; another is the Coach-whip snake (Masticophis flagelliformis)—the fore part of the body is black above and below and shades backward into a dull white. The eye is large and the pupil surrounded by a reddish iris.

It is most important to learn to recognize harmless snakes which, through ignorance, have acquired a bad reputation. The puffing adder (Heterodon) is one of these. It is everywhere considered to be deadly poisonous, yet it is harmless. There are two species, one blackish and the other yellow or reddish. They are easily distinguished by the turned up rostral scale (Hognose).

Another snake known as the Orange bellied mocassin is really a large water-snake (Tropidonotus). He is confused with the true mocassin because he is dull in color and is found about the water in the same localities—distinguished by elongated head and absence of pit.

A. T. S.

Neurasthenic Headaches.

Dr. Joseph Collins states that in neurasthenic headaches, associated with low vascular tension, caffeine, either alone or in combination, gives excellent results. The following formula he has found particularly useful:—

℞ Caffeine citrate, 5 grains.
Sodium bromide, 10 grains.
Sodium bicarbonate, 10 grains.
Pulv. tartaric acid, 10 grains.
M. Make into one powder.
Sig.: Take in water while effervescing. (Experience.)

Monthly Cyclopædia.

ADENOID VEGETATIONS AND DIPHTHERIA.

Diphtheria nearly always begins on the faucial tonsils. Post-nasal vegetations, from their histological resemblance to the faucial tonsils and from their liability to inflammatory attacks, may be regarded as likely to be good soil for the development of the Löffler bacillus. In a series of thirty-eight children who died of diphtheritic angina or its direct consequences, more than 50 per cent. were found to have adenoids more or less developed. From these cadavers the adenoids were removed. In three cases adherent false membrane came away with the adenoid tissue; in one of these there was no faucial membrane.

In doubtful cases the naso-pharynx should be examined. The author suggests that the occurrence of Löffler's bacillus together with an apparently simple sore throat (so-called latent diphtheria) should lead to an examination of Luschka's tonsil, when in the majority of cases a point of infection would be found. Certain cases of sudden croup might be explained by the previous presence of false membrane in the naso-pharynx, and the invasion of the middle ear through the Eustachian tube might be explained in the same way.

Except in cases favourable for posterior rhinoscopy, palpation will be the only possible method for examining Luschka's tonsil, and should be practised gently and rapidly, as hæmorrhage might aid the entrance of toxines into the blood.

The author believes that the special gravity attending diphtheria where there are adenoids furnishes a new argument in favour of the removal of adenoids.—*R. M. Fenn in "The Laryngoscope," August, 1899*

HAMMER-TOE.

The *Australian Medical Gazette* for September 20th, 1899, contains a very good article on this subject by Charles McLaurin, M.B. Edin. This trivial but painful ailment usually attacks the second toe, frequently of both feet. It begins in childhood, but rarely becomes marked before puberty, when the corns which form upon the toe draw attention to the condition. Of the numerous causes assigned for hammer-toe, McLaurin takes the following as the most likely:—

(1) Ill-fitting boots.

(2) Contraction of the flexor tendons, or weaking of the extensors.

(3) Contraction of the digital prolongations of the plantar fascia resembling Dupuytren's contraction in the hand.

(4) Wasting of the interossei.

Practically speaking, the real cause is somewhat uncertain.

Treatment is divided into four heads:—

(1) Orthopædic apparatus (such as iron soles, pads, splints, etc.).

(2) Division of the plantar fascia or flexor tendons. This results in the divided structure cicatrising and contracting on its own account. thus usually making matters worse. The method is untrustworthy, and now seldom performed.

(3) Amputation of the toe.

(4) Excision of the flexed joint. This is the best treatment if the patient can afford the time and trouble. It leads, if carefully performed to a nearly normal toe, without any tendency to recurrence. It acts (*a*) by removing the bony obstacles to straightness; and (*b*) by shortening the bones, since we cannot lengthen the fascia and tendons. The operation is troublesome, but is the best to do, although it is not invariably successful, and is more likely to fail in adults.

BICYCLES AND HERNIA.

In *Le Progrés Med.* for February 4th, 1899, Championniére reported to the French Academy of Medicine that he considered bicycling to be an excellent exercise for patients suffering from hernia. It permitted of an improvement in the strength of the muscle walls of the abdomen and a gain in general health, due to the advantage of exercise in the open air, without the inconvenience attending muscular exercise in the vertical position, which is often difficult for the subjects of hernia. Championniére makes all his patients who undergo an operation for the radical cure of hernia resort early to the bicycle.

TRINITY MEDICAL ALUMNI ASSOCIATION

The eighth annual re-union of the members of the Trinity Medical Alumni Association will be held in this city on the evening of the eighteenth of May. The Executive Committee having decided that the gathering shall partake of a social function alone, there will in consequence be no reading of scientific papers and discussions thereon this year. The attention of all interested herin is directed to the following excerpts from the Constitution of the Association.

The Alumni Association includes active, associate and honorary members.

Graduates in medicines of Trinity university, Fellows by examination of Trinity Medical College, Teachers past or present of Trinity Medical College and the Undergraduates' representative on the Executive Committee are eligible for active membership. Undergraduates of Trinity Medical College are eligible to become associate members. Honorary members are those elected as such at any general meeting.

The objects of the association are: The furtherance of medical science, and to foster an "*esprit de corps*" and fraternal feeling among the Graduates and Undergraduates.

The general meetings are held annually in Toronto, on the day appointed for the conferring of medical degrees. Yearly dues fifty cents.

All Alumni are requested to send their present address, or other items of interest to the general Secretary.

The Association offers annually a gold medal, under the following conditions:

Only graduates and members of the graduating class in medicine of Trinity University or of Trinity Medical College, or Fellows of Trinity

Medical College who are members of the Association in good standing, can compete for this medal.

The medal may be awarded annually for the best Thesis on any subject pertaining to modern medical science.

All these must be sent to the General Secretary of the Association on or before the first day of May 1900, signed only by pseudonym, the name of the writer to accompany his thesis in separate cover.

The awarding of the medal shall be determined by a Committee of three, to be appointed annually by the Executive Committee of the Association.

The thesis standing first and second respectively in merit shall be read by the writers and the medal presented at the annual re-union.

If in the opinion of the judges no thesis of distinguished merit has been submitted, the medal shall not be awarded.

It is certainly interesting and gratifying to know that the competition for the Trinity Medical Alumni gold medal is each year becoming more keen, the participants last year doubling that of the previous year. It is also worthy of note that the competition is not confined to the younger and more recent graduates. Amongst others who sent in thesis last year, were men who had been in practice all the way from ten to thirty-five years, evidencing the fact that the efforts of the Association in this respect are thoroughly appreciated. It is to be hoped this year that more of the men who have recently been doing post graduate work will enter the competition. Announcements in regard to the annnal banquet will be mailed to the members at an early date.

The Difficulties of Administering Intravenous Infusions.

H. E. Kane, in the *Cleveland Medical Gazette* for November, 1899, says all who have tried to administer an intravenous infusion are aware how difficult the procedure is under adverse circumstances. With suitable aseptic surroundings and moderately well filled vessels, it involves little difficulty. In the circumstances which surround emergency cases with an uncleaned skin and veins collapsed from hemmorrhage, the difficulties are considerable. In this class of cases hypodermic transfusion commends itself. The principal objection to it is the time required. To obviate this difficulty, he has devised a simple apparatus which consists of an ordinary container to hold the fluid to be transfused; passing from this is a tube which divides into four branches, each terminating in a a needle. With such an apparatus it is easy to introduce from two to four quarts of fluid into the tissues in half an hour. The amount will dépend upon the size of the needles and the thickness of the intercellular tissues. Four needles are quite sufficient, though more could be provided if necessarry. In subcutaneous injections we cannot act upon the heart instantaneously, the same as though the veins and arteries were filled directly, but the simplicity of the operation and its safety outweigh the slight difference in time in most cases.—*Medicine.*

TORONTO CLINICAL SOCIETY.

Stated Meeting, Feb. 7th, 1900.

Fellows present.

Dr. Aikins, the vice-president, in the chair; Pepler, King, Silverthorn, Barrick, Lehmann, Boyd, Trow, C. Temple, Ross, Fenton, Thistle, McIlwraith, Rudolf, Chambers and Elliott.

Visitors.

Dr. Dunsmore, Oakville; Dr. Wrinch, St. Michael's Hospital and Dr. Goldie.

Radical, Cure of Hernia. (Inguinal) in a Patient 75 years old.

Dr. W. H. Pepler presented this patent, an old man of 75 years. He first presented himself to the doctor in the summer of 1898. Suddenly, while walking on the street, the man noticed a lump; felt something give way, and noticed a swelling in the right groin. On examination, a right inguinal hernia was found; and a truss was ordered and applied. Several of these were tried for a time but all proved failures as the patient was miserable all the time on account of the continual coming down of the hernia. As he was anxious for a permanent cure, Dr. Pepler decided to do a radical operation, which he performed in May 1899, assisted by Dr. Bingham. The canal was opened and the sac tied off and let back into the abdomen. The ring and canal were then closed up with mattress sutures. During the night of the operation, the patient got out of bed to go to the water closet. In the morning it was found that the stitches had broken away and the case really developed into an open operation. The wound was packed with gauze down to the ring and it healed by granulation. The case went on without any further interest and the patient is at the present time sound, and does not wear any truss and has never had any discomfort. The points of interest are the age and the wound healing in this open manner.

Dr. King stated that a truss should not be worn after an operation of this character; and that in a large number of cases where there is a considerable amount of fat in the abdomen you get better results by the open method. He spoke of a patient 73 years of age in which he had done the double operation without any complications.

Fracture of the Anatomical Neck of Humerus.

Dr. King presented this patient, a man aged about fifty years Three weeks ago on the 5th inst., the man was in the upper part of a house, somewhat the worse for alcohol, although he states he was not intoxicated.

He got up to open the door, stretched out his hand to take hold of the latch, but touched something unawares instead, which he took to be a man, missed his footing on the first step, fell backwards and struck his arm about three or four inches before the shoulder joint; there were no other bruises on the body whatever. He got up and went back again into the room and remained there all that evening and night. The next day—he had used the arm all that time—he consulted a surgeon, who

thought there was a severe sprain of the shoulder joint. On the 5th inst. he came to Dr. King's service in St. Michæl's hospital. He found the condition around the shoulder joint like nothing he could recognize, and asked the Fellows for assistance in diagnosis and treatment. There is loss of motion to a considerable extent, atrophy, and the nerves in the axilla are injured.

Dr. King then presented a skiagraph of the shoulder and described the conditions present. There were two fractures present, one a fracture of the shaft of the bone with displacement inward of the upper end of the lower fragment which could be felt in the axilla and which accounts for the shortening. Then from the skiagraph there appears to exist a fracture about the anatomical neck with what seemed to be a rotation of the head of the bone. The first fracture was more or less of a greenstick variety.

Dr. Ross, who examined the subject very carefully, stated that there may have been fracture through the neck and head of the humerus, but there is another piece of bone quite distinctly to be felt high up in the axilla in the neighborhood of the coracoid process which he considered fractured as well.

Dr. Fenton stated also that he could find this bony process quite firm to the touch high up in the axilla; it was about as thick as the end of the finger.

Dr. Barrick though that the case appeared very obscure, and that the skiagraph appeared more obscure still. He thought there was no doubt of there being a fracture in the neck of the humerus.

Dr. King did not think that the coracoid was fractured; the body felt would be a gland or probably a portion of bone from the humerus.

The Treatment of Inebriety.

By special invitation of the president, Dr. Bingham, Dr. Dunsmore, assistant physician Lakehurst Sanitarium, Oakville, read a paper on this topic. He stated: By the courtesy of your president I was invited to read a paper at this meeting of your society and have taken for my subject the treatment of inebriety, but as it will not be right to occupy much of your time, I will confine myself to the treatment of alcoholism and not touch on that of morphine and other narcotics. As resident physician at Lakehurst Sanitarium, Oakville, I will try briefly to outline the course of treatment we adopt in alcoholic cases In the first place let me make it clear, that we do not depend on any so-called specifics or nostrums of any kind, as we all know that secret remedies and formulæ are simply impositions and appeals to ignorance.

The continued use of alcohol to excess, sets up certain changes in the system, and according to Payne, the poisonous effects, in alcoholism of the chronic variety are manifested:

1. As an acute narcotic poison.

2. As a poison acting on the parenchymatous elements, particularly epithelium and nerve, causing slow degeneration and ultimately fibroid changes in the blood vessels.

3. It retards oxidation thus leading to fatty changes.

The effects on the nervous system are best seen in the tremor of the hands and tongue. No characteristic changes are seen in the nervous system. Hæmorrhagic pachymeningitis is not uncommon. Opacity and thickening of the pia-arachnoid membranes with more or less wasting of the convolutions generally occur. The most striking effect on the nervous system is the production of alcoholic neuritis. Osler says that alcoholism at first sight may bear a striking resemblance to general paresis especially in those cases when the pathological findings consist of opacities in the pia mater and congestion of the cerebral substance.

The effects on the digestive system are shown in the catarrh of the stomach and definite changes in the liver leading to various forms of cirrhosis. The effect is probably due to primary degeneration of the liver cells. The typical granular kidney seems to result indirectly from alcohol through arterial changes.

Having outlined some of the most common effects of Chronic Alcoholism I will try to give a sketch of our method of treatment, and would say that it is a condition very difficult to treat when the habit is once fully established; most obstinate cases are those with marked hereditary tendency.

Withdrawal of the alcohol is the first essential and the most trying period is the first week or ten days of abstention. The absence of temptation in institution life is of special advantage. For sleeplessness, bromides or hyoscine are useful; quinine and strychnine may be used in tonic doses. Great care must be taken not to reduce the daily quantity of alcohol too quickly, especially if the patient shows symptoms of delirium tremens. It is often very beneficial to wash out the stomach. If collapse symptoms occur, the limbs should be rubbed and hot applications made to the body. Tincture Capsicum in about five minim doses given occasionally at this period has a good effect. The average case of chronic alcholism can be in this way removed from his liquor in about a week.

Some cases require longer periods of treatment than others, but a course of five or six weeks is usually found long enough. I would like to emphasize especially the importance of moral tonics in treatment of alcoholism. We put all our patients on their honour and do not place any restrictions on them. They are at perfect freedom to come and go as they please. Under these circumstances a man taking alcohol clandestinely would find himself regarded as a traitor to his trust. The natural beauty of the situation of the institution, with the lawns sloping to the banks of Lake Ontario, lends a soothing influence and gives a most delightful and healthful situation. The tone of cheerfulness is kept up by healthful amusements. In summer, there are lawn-bowling, cricket, tennis, boating and bathing; in winter curling is the out-door amusement chiefly indulged in. The institution itself is large, well lighted and heated; ventilation and sanitary appliances excellent. These cheerful home-like surroundings all have their own influence for good. I submit

this paper, gentlemen, not trying to convey the impression that this is the only or best plan for treatment of alcoholism, but simply as a method which has proved very successful in my own limited experience.

I will conclude by stating that intemperance in all its stages may be not only checked and mitigated, but in many cases permanently cured, and the subject fully restored to his former condition of health and sobriety. Such results may not be reached by the final and utter extinction of the morbid desire for alcohol so much as by a development and cultivation of opposing and ennobling qualities, which by their vital action hold the deprived mental tendences of the subject in constant and absolute subjection, so that they may become as inoperative as though they did not exist.

Placental Inspection—Its Uncertainties and its Dangers.

Dr. J. F. W. Ross read a very interesting if somewhat radical paper with this title. The main theme of the paper was to establish digital examination as routine practice after placental delivery. He first instanced a number of cases where he had been called in in consultation, cases the subjects of a profound septicæmia, in which digital examination had determined the existence of portions of the placenta in the uterine cavity setting up the infection. He mentioned four factors as the cause of this septicaemia, viz., traumatism, inflammation and rupture of some pre-existing abnormality, the presence of a virus in the genital canal, and the retention of portions of placenta or membranes ; it was with the latter that the paper more especially dealt. In his opinion the proper treatment of these cases was to make a thorough examination of the uterus, not when the appearance of fever and other symptoms compelled this procedure, but immediately after the delivery of the placenta. In support of this, he spoke of the recognised methods of dealing with miscarriages, and the employment of digital methods under anesthesia in these cases, and as the treatment in such cases was considered proper, that at full term would be equally so. Why wait until elevation of temperature occurs before making an examination of the uterus? He further cited several cases where the rise of temperature did not occur until 10 or 12 days after confinement, which had been caused by portions of retained placenta: and thought that if this method were commonly adopted in practice that we would not see so many cases of puerperal fever. The introduction of aseptic and antiseptic methods had not materially reduced the incidence of septicaemia following delivery.

Dr. McIlwraith thought the condition was generally due to an infective germ introduced from without, and that no doubt the retained placenta formed a good growing ground for the micro-organism, but then there was the fact that cases of septicæmia occurred without any retained placenta at all.

GEORGE ELLIOTT,
Recording Secretary.

The Canada Lancet

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EDITORIAL.

TREATMENT OF BRONCHO-PNEUMONIA IN CHILDREN.

The general practitioner meets with few diseases which give him the same amount of concern that broncho-pneumonia in children does. It is insidious and deadly. The mortality is so high—from one-half to two-thirds of all cases—that the family physician who has even a mild case of it to deal with knows no rest or peace day or night till convalescence is well established.

This is not the place to discuss its various causes; but we confine ourselves to the treatment of what may be styled idiopathic broncho-pneumonia—that is the form which appears without any antecedent gross irritation of the respiratory tract, such as the inhalation of particles of food, blood, or the products of diseases of the larynx or pharynx; or irritating gases. Nor do we deal with that form which apparently depends upon the inhalation of such infective bacteria as those of measles, whooping-cough or diphtheria. In the majority of cases pneumococci are found; and it is the treatment of this form, not induced by antecedent pathological condition, such as tuberculosis; or other prostrating disease, as typhoid, dysentery or traumatic affections of which we now speak.

It may seem that we have eliminated a large proportion of the cases, but experience will show that a very large number occur which to the general practitioner may be styled idiopathic, in that he can find no adequate cause for the inset of the disease.

Doubtless the exciting cause is the pneumococcus as Neumann says, but where one doctor discovers this germ the other nine hundred and ninety-nine will have to take it for granted.

The routine treatment of the disease is well known by every one, the poultices, mustard plasters, and oil and turpentine; the cough-mixtures, with ipecac, antimony, ammonia, opiates *et al*; the bronchitis kettle, the ventilation, diet, stimulants, nursing, etc., have been told again and again and require no repetition here.

But we wish to call the attention of the profession to what we believe to be the specific action of quinine in these cases. Our experience has abundantly shown that the drug is as much a specific in broncho-pneumonia in children as it is in malarial affections. That is saying a good deal, but some years' trial has not shaken our faith in it.

The one thing needful is heroic doses. Many practitioners use quinine but not in sufficient quantity. To be harmful to the pneumococcus it must be exhibited in large frequently repeated doses.

Did any one ever hear of a case of poisioning by quinine? Then why, when giving it for specific reasons, either for the plasmodium malariæ, or the diplococus pneumoniæ, should we be content with half grain or small doses every four or six hours?

Give half a grain every two hours for every year of the child's life as a regular dose, which may be increased in quanity or given more frequently as the case demands. We could quote case on case to show the specific effect of such dosage. We can only affirm our belief in the wonderful efficacy of the drug when exhibited in heroic (?) doses.

J. L. D.

SOUTH AFRICAN HORSE SICKNESS.

Cavalry and mounted infantry form such an essential part of both the British and Boer forces in the present war in South Africa that military critics think that the success of the British operations, to a considerable extent, depends upon the prevention of sickness among our unacclimatized horses. Therefore frequent mention has recently been made in both the lay and medical press of an equine disease, enzootic and

at times epizootic, in various parts of South Africa and causing great mortality. For instance, Hayes states that in the epizootic of 1854-5 64,850 horses died in Cape Colony, and in 1892 13,979 deaths occurred Very few animals that acquire the disease recover. A short description of this South African horse sickness may therefore be of interest.

Œdema mycosis, as it is technically called, is an infective disease due to a mould, which, according to Edington, the bacteriologist to the Cape Government, is related to, if not identical with, a species of penicillium. This organism has invariably been found present in the bodies of animals dead of the disease.

The malady is not directly transmissible from horse to horse, but is caused by eating infected forage, particularly when laden with dew. This is shown by the fact that the disease appears among horses allowed to graze while dew is on the grass, whereas those partaking of dry fodder escape. High and dry regions are usually free from the disease.

Season has an important influence on its occurrence. It rarely appears before February, is worst during March and April, disappearing with the first frost in May Fatigue, exposure and lack of proper food —conditions particularly attendant on military operations—are important predisposing causes.

The period of incubation is about eight days, and a fatal result generally ensues about four days after the onset of symptoms. Death which usually occurs suddenly, is due, according to Edington, to the growth of the fungus into the blood vessels, with resulting widespread thrombosis.

The few horses which recover are said to possess thereafter a life-long immunity, though this statement lacks actual proof. By means of inoculation Edington has succeeded in establishing a degree of artificial immunity so that subsequently only one animal in every three attacked succumbs to the disease.

There is no successful method of treating the malady known. Prophylaxis is all important. When possible during prevalence of the disease, horses should be sent to a high and dry region away from the affected districts. Where this cannot be done the animals should be kept in stables or enclosures and not allowed to feed on the dew-covered grass.

During military operations, where it is impossible to keep horses in stables or enclosures, the wearing of nose-bags during the time of the day the dew is on the grass is said to be an efficient preventive measure.

THE EIGHTH COMMANDMENT IN MEDICAL JOURNALISM.

Under the above heading THE LANCET, owing to the unfortunate oversight of not crediting the source of some selections made use of in its pages during the past year, comes in for caustic, though we regret we cannot say unmerited criticism from a number of contemporaries. A year ago the editorial staff of the journal resigned, and in the somewhat disorganized state of affairs that followed the matter complained of occurred. For this the present staff disclaims all responsibility. In justice to our contemporaries, however, we wish to express extreme regret at the occurrence and the strongest disapproval of such a breach of the ethics of medical journalism.

While in the present instance we believe from information received that it was the result of an oversight, we do not wish to claim this as a satisfactory defence.

THE LANCET with the March number will be under the control of an entirely new staff, with an editor in charge, responsible for the conduct of the journal, and associate editors, responsible for each department. This staff will endeavor to maintain the high reputation for integrity and journalistic honor, which has characterized the "CANADA LANCET" since its establishment in 1867, and will be assured that it will not again be necessary to appear in the rôle of apologists in a matter so thoroughly distasteful and indefensible.—H. B. A.

THE ABUSE OF PUBLIC LABORATORIES

Following the great advancement made in preventive medicine during the past few years from the discovery of the relationship of micro-organisms to various communicable diseases, state-supported laboratories have been established for the purpose of utilizing these discoveries to the fullest possible extent in the interests of public health. The wisdom of this action few will question.

Unfortunately, however, these laboratories have been, and are, used to a considerable extent by physicians for the benefit of individual patients who are able to pay for the services afforded. They have thus become, on a large scale another means of pauperizing the public, who are at all times only too ready to shirk their financial obligations to the profession. Why a wealthy patient should have the diagnosis of diphtheria, phthisis, or typhoid fever made at the public expense is difficult to explain.

The services of a bacteriologist are not less valuable than those of the clinician, and should be paid for by the patient. As well might

boards of health furnish *free* treatment as *free* diagnosis,—a contingency possibly not so remote as some might imagine. Free services to *pauper* patients would meet with no objection, but it is a gross misapplication of public funds in the case of those who are able to pay. Moreover, it defeats the prime object for which public laboratories were established—the investigation of disease and the application of the knowledge acquired to their prevention.

We have here the nucleus of an evil which may before many years become as great as the abuse of medical charities or the system of lodge practice. It is another encroachment on the interests of the medical profession, which should receive the most vigorous opposition. We are glad to see that other journals are calling attention to the matter and we quote with hearty approval the following editorial from the Maryland Medical Journal of Dec. 9th :

"The public laboratories which are springing up everywhere in connection with boards of health offer to the general public and to physicians, certain privileges and benefits which should never be obtainable at public cost. It must be clear that such laboratories are organized and equipped first and last for the protection of public health, and certainly not for the creation or maintenance of a new form of mendicancy, lay or medical.

An adjoining State maintains a general clinical laboratory. The State Board of Health sends to physicians circulars of instruction concerning the collection of urine and feces, the administration and recovery of test meals, the preservation of tumors and other pathological tissues and the methods of transmitting all these things to the laboratory. All this is paid for out of public funds. Spectacles and teeth might as well be provided at the expense of the State. Free chiropody would be more profitable and distinctly less pauperizing.

It is difficult to understand how any mind, even the legislative variety, could have sanctioned such bad public policy.

The benefits which physicians and private citizens derive from such laboratories are not gratuities, but a fair return for information which public officials can use in restriction and prevention of disease.

The public bacteriologist is not the servant of the private citizen or of the clinician any more than the public chemist is, nor can his services be demanded upon any other ground than that the community shall have a primary and paramount interest in every investigation which he makes at public cost."

A CONGRESS ON MEDICAL ETHICS.

In connection with the General International Medical Congress in Paris during the first week in August there will be held the first International Congress of Deontology or Medical Ethics. A perusal of the programme outlined for the meeting will show that the subjects to be dealt with are of much interest. The profession in Great Britain are taking an active part in promoting the success of the meeting, and Canada is represented on the Committee of Patronage by Professor J. G. Adami of Montreal. It is to be hoped that a goodly number of Canadian doctors who visit Paris this summer will take advantage of the opportunity of being present. The committee in Paris who have the matter in charge are making every effort to arrange for the comfort of those attending the Congress.

Dr. Jules Glover, 37 Rue du Faubourg Poissonnière, Paris, the General Secretary, will furnish information as to lodgings, transport of baggage, afford interpreters, etc.

Full membership is accorded to all who approve of the object of the Congress, on payment of an entrance fee of 12 shillings. Members will receive gratuitously the reports of proceedings.

The following is an outline of the questions to be discussed:—

The Relations of Medical men and Collectivities.

Dr. CUYLITS, formerly Secretary of the Brussels Medical Union, will report on the Relations between Medical Men and Benefit Societies. It is also proposed that the following questions should be discussed in this Section:—

1. The Laws governing the Exercise of Medicine.
2. The Relations of Medical Men and the Organizations for the Relief of the Poor: workhouse, infirmaries, hospitals, dispensaries, etc
3. The Economical Position of Medical Officers of Health.
4. The Relations of Medical Men and the Judiciary Authorities expert evidence, professional secrecy, etc.
5. The Relations of Medical Men with other collectivities than State or Municipal collectivities, such as Railway, Insurance, and Industrial or Mining Companies, Provident or Benefit Societies, Private Charities, etc.

The Relations of Medical Men and Individuals.

Dr. DESCOUTS, Professor of Forensic Medicine, will report on the Illegal Exercise of Medicine. This section is invited to discuss the question of medical fees; the privileges of the Medical Practitioner; and

the relations of the Practitioner with nurses, midwives, dispensing chemists, manufacturers of surgical apparatus, etc., and with quacks.

The Relations of Medical Men with Fellow Medical Men (Medical Deontology.)

Reports will be read by Dr. GRASSET, Dean of the Medical Faculty of Montpellier, on the Fundamental Principles of Medical Deontology; by Dr. POLLAK, of Vienna, on the organization of Chambers of Medicine and the results attained in the countries where these exist; by Professor JENDRASSIK, on the organization of Medical Leagues in Hungary: and by Mr. ADOLPHE SMITH on the organization of Medical Unions in Great Britain.

Questions submitted for discussion:—Consultations, Cliniques and Medical Institutions, *Locom Tenens*, Sale of Medical Practices, Orders or Guilds, Chambers, Syndicates or Unions of medical men, and the Relations between medical men of different nationalities.

Professional Organization of Insurance, Mutual Assistance, and Defence.

Dr. LANDE, of Bordeaux, will report on Insurances for the help and relief of medical men. Dr. PORSON, of Nantes, will report on organizations for Professional Defence. The Section will be invited to discuss the question of Insurance for medical men against sickness or infirmities of the creation of a Pension Fund, a Fund for the succour of the widows and orphans of medical men, etc.

A New Medical Journal

The Stylus, a monthly record of hospital and clinical work, made its first appearance in February. It is edited by Dr. Wm. Porter, of St. Louis with Dr. Robert M. Ross as assistant. The initial number is a very creditable one and if our contemporary follows the course outlined in its introductory remarks it will prove a valuable acquisition to to medical journalism.

How John Bull pays for Medical services

According to the British Medical Journal, Sir Wm. MacCormack, Mr. Frederick Treves and Mr. G. Makin, the consulting surgeons with the British forces in South Africa, will each receive $25,000 a year for his services.

PERSONAL.

Dr. Ernest Hall who practised in Toronto for a short time, has returned to Victoria, B. C.

Dr. E. H. Stafford, for some years medical assistant in the Asylum for the Insane, Toronto, has gone to Bermuda for the winter to recuperate.

Dr. R. W. Bell, of Peterboro, officer commanding the 57th battallion, has been appointed to the position vacated by Dr. Stafford's retirement.

Dr. C. J. Copp, (Trinity '97), who recently returned from England, where he has spent the past three years in post graduate work, has opened an office on Wellesley St.

Dr. A. F. Oliver, one of the oldest and most prominent physicians in Kingston, did suddenly on Feb. 15th.

Dr. D. J. Gibb, Wishart, has been appointed Laryngologist to the Muskoka Cottage Sanitarium, Gravenhurst.

The British Medical Journal is authority for the statement that a movement is on foot to secure the appointment of Dr. Wm. Osler, of John Hopkin's University, to the Professorship of Medicine in the University of Edinburgh, rendered vacant by the death of Sir Grainger Stewart.

Dr. Harper, of Alliston, and Miss Amy Wright, of the same town, were recently married.

Dr. H. J. Hough (Trinity '98) has begun practice in Midland.

Dr. T. J. Norman, of King, sailed from New York for England, on March 7th, where he will spend some time doing post graduate work.

Dr. G. Sterling Ryerson is doing good service as the Canadian representative of the Red Cross Society in South Africa. The Illustrated London News, of Feb. 17th, contains a picture of Lt-Col. Ryerson and makes the following reference to him. "Lieutenant-Colonel G. Sterlinl. Ryerson, of the Canadian Army Medical Staff, is now acting as Speciag Service Officer and Canadian Red-Cross Commissioner at the seat of war. Colonel Sterling Ryerson is known already to some of our own troops, with whom he served at the time of the Fenian Raid in 1870, and during the North-West Rebellion of 1885. He was in London, attached to the Canadian contingent, during the Jubilee of 1897. When he is at home he is known for his good service as Executive Chairman of the Canadian Branch of the British Red-Cross Society, and as General Secretary of St. John's Ambulance Association in Canada. Already he wears the insignia of the Order of St. John of Jerusalem.

Dr. H. E. Livingstone,(Trinity'94,) who subsequent to graduation, spent some years as a medical missionary in Zululand and afterwards in private

practice in Natal, gave a lecture on the Boers in the theatre, Trinity Medical College, on the evening of Feb. 20th. On the outbreak of the present war, Dr. Livingstone was taken prisoner and was badly treated by the Boers. He made his escape and volunteered for the army medical service. Not getting a commission, he returned to Canada. Whatever redeeming qualities the Boers possess, were not revealed to Dr. Livingstone during his experience among them.

Dr. H. G. Barrie, (Trinity '98,) is the representative of the Y. M. C. A., with the Royal Canadian Regiment of Infantry in South Africa. Letters from our soldiers refer in the highest terms to the useful work being done by Dr. Barrie and of his personal popularity.

BOOK REVIEWS.

A MANUAL OF MODERN SURGERY.

An Exposition of the accepted doctrines and approved operative procedures of the present time; for the use of Students and Practitioners. By John B. Roberts, A.M., M.D., Professor of Anatomy and Surgery in the Philadelphia Palyclinic; Mutter Lecturer on Surgical Pathology of the College of Physicians of Philadelphia. Second edition revised and enlarged, 473 engravings and 8 plates. Lea Bros. & Co., Philadelphia and New York, 1899.

Dr. Roberts, to use his own words, has endeavored "to give the profession, in a condensed form, the accepted doctrines and approved procedures of Modern Surgery." The author has stuck well to his text, with the result that we have before us a work which we can highly recommend to students and practitioners looking for a book from which all the straw and chaff have been very rigidly excluded while the grain is served up in an acceptable form.

The book has already reached its second edition. The articles on appendicitis, joints, genito-urinary organs and amputations have been entirely re-written while the text throughout has been carefully revised and brought up to date. F. F.

SURGERY.

By Thomas Pickering Pick, London, Longmans Green & Co., 1899.

This is a new one vol. Surgery written by a surgeon and surgical lecturer of wide experience. On first glancing through the book one gets a favorable impression from the large number of illustrations given, as well as from the unusually large proportion of these which are original and now appear for the first time.

Based as it is upon the lectures delivered by the senior surgeon at St. George's Hospital one would naturally expect its pathology to be in accord with the best modern teaching. In this particular no disappointment is met with. All through the work runs the dominant idea of a sound, safe, judicious practice based upon a correct pathology.

Reflecting as it does the matured views of a surgeon of large experience subjects for commendation are easily found. Passing over these we note just a few points upon which the author's practice is open to critical comment.

And first of all we may question the propriety of omitting from a systematic work on surgery all reference to the great and practical subject of anæsthesia.

In the removal of the appendix it is advised to " wash out the cavity and insert a drainage tube for 24 or 48 hours." From our standpoint neither irrigation nor drainage are needed in " interval " or in early and non-perforated cases, and the above teaching is at least ten years behind the age.

Mr. Pick prefers tracheotomy to intubation in dealing with the laryngeal obstructions of diphtheria. His endorsation of an operation often performed here twenty years ago and now almost never done, might be mischevious, but for the fact that the early use of antitoxin and the early and persistent use of calomel fumigation with us has practically removed the necessity for either tracheotomy or intubation. We are beginning to forget that children used to die from membranous laryngitis and those of us who some years ago did intubation frequently, now find little use for the ingenious instruments perfected by Dr. O'Dwyer. Inguinal colotomy is described after the methods of Cripps and Allingham. Operators who are experts, doubtless secure excellent results by these procedures, but since we have in Greig Smith's modification of the Maydl-Reclus operation, a rapid, safe, simple and certain plan for the formation of an artificial anus it is a matter of surprise that it should not even be referred to.

In the treatment of Colles' fracture Carr's splint is spoken of as " certainly the best and the most frequently used." It would be easier to overlook this if the all-important subject of complete reduction under anæsthesia had received the consideration which it deserves.

In the treatment of hammer-toe, the excision of the joint between the first and second phalanges by a lateral incision is advised, and amputation of the toe (usually the second) is rejected as tending to cause hallux valgus. That excision is a judicious procedure may be granted but the ultimate results of a series of amputations for the relief of hammer-toe leads us to question if the objection on the score of a possible sub-luxation of the great toe is well taken.

Even when brought sharply into contrast with recent and notable additions to our list of up-to-date treatises, Mr. Peck's work does not suffer, and it can be safely endorsed as in the main worthily representing British surgery of the present day.

The publisher has done his part well, and eyes that are becoming critical regarding type will be contented with this work.

N. A. P.

PRACTICAL TREATISE ON MATERIA MEDICA AND THERAPEUTICS.

By Robert Bartholow, M.A., M D, L.L.D., Professor Emeritus of Materia Medica and General Therapeutics in the Jefferson Medical College, of Philadelphia, &c., &c. Tenth Edition, Revised and Enlarged. D. Appleton & Co., New York, 1899.

A treatise that has passed through ten editions, is so well known as to require no extended review. In the present edition the newer remedies are described, a special article on prescription writing has been added and various corrections have been made, so as to bring it well up to date. It is a very practical and thoroughly reliable guide and well deserves the popularity it has attained.

TRANSACTIONS OF THE AMERICAN CLINMITOLOGICAL ASSOCIATION FOR 1898.

VOLUME XIV.

This volume opens with the Presidential address by E. O. Otis, of Boston, on Anenbrugger and Lalennec, the discoverers of auscultation and percussion. It is an interesting and scholarly history of the lives of these two great masters in medicine.

Dr. F. I. Knight, in a short article deals with "Common Errors of General Practitioners in the management of cases of Pulmonary Tuberculosis." He especially mentions five :—1st, the failure to make an early diagnosis. 2nd, the failure to admit the gravity of the situation the moment it is discovered and to put the patient at once in the best possible condition for recovery. 3rd, temporizing in recommending treatment not only useless but positively injurious. He particularily deprecates the advice sometimes given to the patient to "drink whiskey" as a preventive. 4th, sending unsuitable cases away from home and not carefully selecting the climate suited to each case 5th, allowing cases to progress without proper medical supervision.

Vincent G. Bowditch, Boston, has a very practical paper on "Suggestions,—the result of recent experience with phithisical patients," and E. Fletcher Ingals, Chicago, deals with "The value of Systematic Physical Training in the prevention and cure of tuberculosis." A most valuable paper is contributed by Henry P. Loomis on the "Pretubercular stage of Phthisis, and its diagnosis." Dr. Beverley Robinson New York, has a suggestive paper on asthma and its treatment. He insists on the presence of some definite causative factor as malarial taint, gouty or rheumatic diathesis, morbid conditions in the nose and throat, gastric catarrah bronchitis, etc., being present in probably all cases.

The use of Ergot in chronic malaria is advocated in a paper by A. Jacobi.

The clinical uses of Röntgen light is fully discussed by Francis H. Williams of Boston, with many excellent illustrations.

James M. Anders, of Philadelphia, strongly advocates special hospitals for the treatment of consumptives, supporting his arguments by numerous statistics.

Papers are also contributed by Dr. G. R. Butler, Brooklyn; Judson Daland, Philadelphia; Roland G. Curtin, Philadelphia; Andrew H. Smith, New York; Guy Hindsdale, Philadelphia; Charles E. Quimby, New York; Theobald Smith, Boston; E. R. Baldwin, Saranac Lake; J. E. Stubbert, Liberty, N. Y.; and W. D. Robinson, Philadelphia.

Altogether this volume is an exceedingly interesting and valuable one.

HYDE ON THE SKIN.

A Practical Treatise on the Diseases of the Skin, for the use of Students and Practitioners, by James Nevins Hyde, A.M., M.D., Professor of Dermatology and Venereal Diseases in Rush Medical College, Chicago. New (5th) Edition. In one octavo volume of 866 pages, with 111 engravings and 24 full-page plates, 8 of which are colored. Cloth, $4.50, net; leather, $5.50, net. Lea Bros. & Co.

The fact that five editions of this work have been required in 16 years to supply the demand, in itself is the highest commendation it could have. The last edition was exhausted in two years. The present is fully revised and brought up to date. The book is gotten up in good form, the type is clear and the illustrations are numerous and excellent.

We know of no work on this subject which will give greater satisfaction.

DUDLEY'S GYNECOLOGY.

A Treatise on the Principles and Practice of Gynecology.—By E. C. Dudley, A.M., M.D., Professor of Gynecology in the Northwestern University Medical School, Chicago. New (2d) edition. In one very handsome octavo volume of 717 pages with 453 engravings of which 47 are in colors and 8 colored plates. Just ready. Cloth, $5.00, net. Leather, $6.00, net. Lea Bros. & Co.

The first edition of this work was exhausted in a year. The second edition has been carefully revised and 78 pages added. The subject is dealt with from a practical standpoint throughout though the scientific aspect is not lost sight of. The extensive experience of the author has enabled him to produce a book valuable to both practitioner and student. Pelvic massage after the Brandt method is fully set forth in the closing chapter, the various manipulations being shown by a series of illustrations.

The work is concise and definite in its teaching. The cuts are numerous and well chosen and the press work excellent.

G. P. S.

A TEXT BOOK OF PHYSIOLOGY.

By W. Foster, M.A., M.D., L L.D., F.R.S., Professor of Physiology in University of Cambridge, Fellow of Trinity College, Cambridge. With an appendix on The Chemical Basis of the Animal Body, by A. Sheridan Lea, M.A., D.Sc. F.R.S, Unsversity Lecturer in Physiology in the University of Cambridge. (Macmillan & Co., New York and London), 1898.

The five volumes of Dr. Foster's original work now appear as one volume of 1160 pages. The bulk of matter is greatly reduced, but it has been so arranged that all the important points are retained and given their full prominence and with sufficient elaboration. The abridgement consists in the sacrifice of the historical sections, and the space formerly devoted to discussion of the more theoretical problems.

The volume is divided into four books and the subject is taken up under the same headings as in the former work, the argument being carried through in the same manner, necessarily more condensed, but none the less clear. The appendix on the chemical basis of the animal body is abridged but to a less extent than the main text. Some of the more elaborate details as to methods are omitted as also are some of the more vexed questions and references to literature.

The whole has been thoroughly revised and new points introduced where possible.

The volume should prove a very useful text to students and physicians alike.

H.C.P.

AMERICAN YEAR BOOK OF MEDICINE AND SURGERY.

Philadelphia, W. B. Saunders. Toronto, Carveth & Co. 1900. Price $3.00.

The volumes for the year are to hand.

We presume that our readers are aware of the general plan and scope of the work.

It is to give in a small space the gist of medical and surgical opinion on all matters of interest appearing in the medical literature of the year.

George M. Gould has the general editorial charge of the work, and he is assisted by numerous and able collaborators—the best men in the United States in their respective departments.

In my opinion the books are invaluable to every medical man. They are mines of scientific information, the latest, and fully digested. We have referred to both volumes—Medicine and Surgery—many times since we got them, and have always got light and information on the subject under consideration.

Their value consists mainly in keeping their readers abreast of the very latest scientific and practical medical and surgical ideas of the day.

J. L. D.

PUBLISHERS' DEPARTMENT.

INCONTINENCE OF URINE IN CHILDHOOD AND ITS TREATMENT.

BY WILLIAM C. WILE, A.M., M.D., DANBURY, CONN.

(Reprinted from the *Massachusetts Medical Journal*, Boston, Mass., February, 1900.)

Though enuresis is occasionally met with in adult life, yet, for all practical purposes, it may be considered an affection peculiar to childhood, rarely occurring after the age of puberty. Before the completion of dentition, incontinence is not looked upon as a disease, but is considered a normal condition. It is not surprising, therefore, that involuntary passages of urine should occur mostly among illy-nourished, ill-conditioned children whose muscular fibres still remain weak and undeveloped; or among others comparatively strong, but whose urine for certain reasons has become unusually acid and irritating in character. It is to the etiology and treatment of these latter cases that we wish to direct attention here, inasmuch as in this advanced age of civilization, when children are permitted to gorge upon sweets and meats, such patients are becoming more common every day.

It has already been demonstrated, that, in adult life, among those who "live high" and are addicted to luxurious habits, symptoms of uric-acidæmia manifest themselves in the genito-urinary system in the form of cystitis, gravel, sensitive urethra, etc., attended with urine strongly acid, loaded with urate salts. So among children who are fed to repletion and indulged inordinately upon "sweetmeats," the urine becomes charged with urate crystals which irritate, by their points, the partially developed, sensitive mucous membrane and sphincter muscles of the bladder, resulting in incontinence. In an article, entitled "Uric Acid Poisoning," published in *The American Therapist* for April and May, 1898, Dr. J. Lindsay Porteous writes that he is satisfied nocturnal urination in children is often the result of uric acid. He refers to the fact that one year, at the Leake and Watts Orphan Home, he treated fifty-four cases of this troublesome habit, fifty-one of which recovered entirely by the administration of alkalies and regulated diet.

In addition to alkaline remedies, however, which are effective only as diuretics or uric acid solvents, the writer has usually found it necessay to prescribe some cholagogue agent in order to excite free biliary flow and thus relieve the work of the genito-urinary system by removing much of the fluid waste of the body through the bowels. Hepatic stimulation of this character is essential, too, owing to the fact that, in these cases, where the ingestion of sweets is sometimes enormous, the liver cells soon become clogged with glycogen, which of course interferes with the special metabolic function of that organ in changing nitrogenous waste and the ammonium carbamates into urea—which, when imperfectly performed, results in the retention of uric acid in the system with all its attendant evils.

For antacid and antilithic effects the salt of lithia still holds first rank among the therapeutic agents in the treatment of the uric acid

diathesis. This probably owing to its ready combination with the uric acid of the blood, forming urate of lithia, the most soluble of the uratic salts. It has been found, however, that the natural lithia waters contain less of that agent than occasion calls for. Prof. Abraham Jacobi, who believes that "calculi are of great frequency in infancy and childhood," states in the Archives of Pediatrics, VII, 424, that artificial preparations of lithia, when carefully made, have the advantage over the natural waters owing to their greater strength and potency.

There have been many such preparations presented to the medical profession, some of which are effective as uric acid solvents, and others not, but none of which act effectively also upon the liver, stimulating cellular action, except the new laxative salt of lithia thialion. The thorough cleaning out of the hepatic cells produced by this remedy is in some cases very striking, as indicated in the character of the stools, which becomes not only "mushy" in consistence, but about the third day are so positively disgusting in odor (owing probably to the "cleaning out" process referred to), that the little patients' parents have sometimes refused to continue with the remedy, believing that it is producing some disease "inwardly."

While thialion, therefore, is an agent not particularly æsthetic in effect yet its therapeutic results in these cases are satisfactory and pronounced. Not only is this seen in the character of the passages from the bowels, but also that from the bladder, the urine becoming rapidly less acid and irritating, and finally alkaline. When this occurs the medicine is usually omitted for a day or two, or until the litmus indicates that the neutral point has again been passed, when it may be resumed and continued until recovery. As an illustration of the potency of this remedy and the practical results which may be obtained by its administration, and to evidence that incontinence is obtained by its administration, and to evidence that incontinence is often but the local manifestation of a general uric acid poisoning, the following cases are submitted here, in which an alkaline agent has been used with exceptionally gratifying results.

William D., æt. 12, was brought to the office for treatment March 10, 1899, his mother reporting that he had "wet the bed" regularly every night for the past five or six years. During a great portion of this time, the usual remedies had been prescribed by the family physician—belladonna, iron, ergot, etc.,—affording only temporary relief. The patient's general health had been good, until recently he had begun to grow irritable and complain of dizziness and headache. His skin and mucosæ were pale, and bowels inclined to costiveness. Upon further questioning it was learned that the patient had always been extremely fond of "sweetmeats," and, owing to the good nature of the father, had usually succeeded in getting his "fill" regardless of material restrictions. His mother had already suspected that this indulgence was a causative factor in the case, and was much pleased to learn that her opinion was shared by the new physician. Directions were at once given as to diet, and thialion administered in the usual way: *i. e.*, half a teaspoonful in a cup of hot water every morning upon rising. The treatment was continued in this way for the first month without much change in the

patient's condition, except that the bowels had become regular, while the headache and dizziness had practically disappeared. It was noticed, too, that the quantity of urine voided during the night was gradually diminishing. At the end of another month, a marked improvement was manifest, the normal color of the skin having been regained, while the bedding in the morning was found to be but slightly soiled. On June 15th, three months after the commencement of treatment, the mother reported her son cured, but was advised to continue with the medicine for another month, reducing the dosage to a third of a teaspoonful every other day. Nothing further was heard of the case until the 16th of December, on which date the mother called and stated that the boy had not relapsed into his former habit but once during the preceding six months, a mistake which she attributed to a hearty meal taken just before retiring.

A case even more troublesome than the above, was that of John D., a young man 18 years of age, who reported that he had "soaked the bed" nearly every night since he could remember, wetting through sheets and mattress (as well as blankets placed to absorb the urine). He was first seen two years ago, having, at that time, been treated unsuccessfully by several different physicians. I administered the usual remedies for two or three months, without benefit and the patient was soon lost sight of. Last September he again appeared for treatment, for another trouble, and, being asked regarding his old complaint, he stated that he was "just as bad as ever," and had given up all hopes of obtaining relief. An examination of his urine revealed a considerable quantity of urates and a high degree of acidity, He was finally persuaded to try a new course of treatment; and, having first been advised as to his diet, was at once put upon thialion--a teaspoonful three times a day. This heroic dosage was continued for a week, and then reduced to a teaspoonful every morning upon rising. The young man followed our directions carefully in regard to his diet, and took the medicine regularly for two months, at the end of which time he called at the office and reported himself cured. Three months have since elapsed, during which time he says he has retained his urine at night "as well as any one." He is of a nervous temperament, and his habits are of such a character, that, were there any doubt as to his being entirely cured, the fact would have offered itself long ago. The recovery of this case in so short a time is in many respects remarkable, and can be explained by the writer only on the ground that the patient had for a long time been a victim of the uric acid diathesis. His bladder, too, was doing much of the work of the bowels. His stools had always been hard and dry, until taking the thialion, when they immediately became soft and "mushy" in consistence.

Of the many preparation of Vaccine now on the market that of Frederick Stearns of Detroit, the Glycerinated Vaccine, is the most convenient. It is put up in packages, with scarifiers and shields for the arms, that makes it most convenient for the doctor, and being hermetically sealed it will retain its properties for an indefinite period. Samples will be sent upon application at the Detroit office.

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It has gained a Wide Reputation, particularly in the treatment of Pulmonary Tuberculosis, Chronic Bronchitis, and other affections of the respiratory organs. It has also been employed with much success in various nervous and debilitating diseases.

Its Curative Power is largely attributable to its stimulant, tonic and nutritive properties, by means of which the energy of the system is recruited.

Its Action is Prompt: It stimulates the appetite and the digestion ; it promotes assimilation, and it enters directly into the circulation with the food products.

The prescribed dose produces a feeling of buoyancy and removes depression and melancholy ; *hence the preparation is of great value in the treatment of nervous and mental affections.* From the fact, also, that it exerts a double tonic influence, and induces a healthy flow of secretions, its use is indicated in a wide range of diseases.

When prescribing the Syrup please write, "Syr. Hypophos. FELLOWS" As a further precaution it is advisable to order in original bottles.

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Nepenthe—The Standard Anodyne and Opiate.

Pereira says: "Opium is the most valuable remedy of the Materia Medica. For other medicines we have one or more substitutes; for opium none—at least in the large majority of cases in which its peculiar and beneficial effects are required."

The dictum of the great pharmacologist made more than half a century ago, still holds good. At a recent annual meeting of the British Medical Association, one of the most eminent physicians of the present day, after reviewing the action and utility of the numerous hypnotics and analgesics lately introduced, said, "When sleeplessness is due to pain, there can be no doubt that no other hypnotic approaches opium in value, and in such cases it has always appeared to me that the possible evils consequent on the administration of opium are minimized.

"After opium, though at a long interval, comes chloral, which undoubtedly at times relieves pain, and below chloral in efficacy come the other hypnotics.

In cardiac affections, accompanied by sleeplessness, opium stands out prominently as the best soporific, especially when given in the form of subcutaneous injections."

The ordinary preparations of opium and its alkaloids produce many unpleasant symptoms—such as nausea, headache and constipation—which are a great restriction to the employment of the drug, and in numerous instances render its administration wholly inadmissible.

The originators of the preparation known as "Nepenthe" have, by a carefully elaborated pharmaceutical process, eliminated all constituents which give rise to these disagreeable after effects, whilst retaining in the fullest degree the unrivalled sleep-producing and pain-allaying properties of the drug.

That this result has been successfully achieved is proved by the fact that, although originally introduced to the medical profession in Great Britain many years ago, Nepenthe still holds the first position as the sedative and hypnotic *par excellence*, and is constantly and increasingly prescribed by physicians in all parts of the world.

The *Lancet* Analytical Report on Nepenthe: "Nepenthe, or Anodyne Tincture, prepared by Messrs. Ferris & Co., Bristol.—This preparation really consists, as stated, solely of opium, resembling somewhat the liquid extract of the British Pharmacopeia. It is claimed for it that it does not produce headache, stupor, giddiness, depression of spirits, diminution of nervous energy, prostration of strength, or constipation; it is doubtless less stimulating than those preparations of opium made with the solid and crude drug, and further commendation of Nepenthe is its uniformity of strength."

THE CANADA LANCET

VOL. XXXII TORONTO, APRIL, 1900. No. 8.

ORIGINAL ARTICLES.

SPLENECTOMY.*

BY COLIN A. CAMPBELL, M.D.

House Surgeon Toronto General Hospital.

The following case of excision of the spleen with recovery which I have had the opportunity of studying has suggested the subject of this paper. Dr. J. A. Temple has furnished me with notes of another case.

Case No. I. On Nov. 16, 1899, there was admitted to Toronto General Hospital under the care of Dr. Nevitt, Agnes F., aged 29 years, suffering from chronic pain in the abdomen and back, extreme weakness and pallor and recurrent diarrhœa. She said there was a lump in her abdomen. The patient was born in Ontario and with the exception of the ordinary diseases of childhood from which good recoveries were made, she enjoyed good health until 16 years of age. She worked in a woollen mill. At this work she grew pale and began to be troubled with a dragging pain in the back and attacks of pain, in the epigastrium, attributed to dyspepsia. She has had more or less of these pains ever since. She gave no history of malaria. Menstruation began at 14 years of age and has always been painful but otherwise normal. She married at 21 but has had neither children nor miscarriages.

Five years ago, when she had been married two years, she was seized during the night with an attack of smothering, and pain in the epigastrium. No cause was known for the attack; she had not been injured directly or by overlifting. Her physician in examining her discovered, what she herself had never noticed, a lump in the abdomen. Since then pain in the lower part of the abdomen has been almost constant—never very great but aggravated by meturition. During the past summer diarrhœa has been a prominent symptom and she has steadily lost weight, strength and color, especially during the past two months.

At the time of her admission to the hospital her appearance was that of a very much emaciated and anæmic woman. Her sclerotics were clear and pupils active, her tongue clean and temperature normal. Heart and lungs were healthy. In examining the abdomen, which was quite lax

* Read before the Toronto Post Graduate Medical Society, April 2nd, 1900.

a mass was found on the left side extending from the left costal margin almost to the pubes and forwards to the middle line. Resistance was most marked in front near the umbilicus, less so in the loin. The mass was quite moveable. The percussion note was dull over the whole of the left side of the abdomen and left flank. The urine was normal.

A blood count at this time showed 3,800,000 red corpusles, 12,000 leucocytes and 40 per cent. of haemaglobin.

A differential count showed the different varieties of leucocytes to be in about their normal relative proportions, viz.:

Polymorpho nuclear	65 per cent.
Lymphocytes	17 "
Large mononuclear and transitional	17 "
Eosinophiles	1 "

The pelvic organs were free from disease. The tumor was thought to be renal, and on November 16 Drs. Nevitt and Bingham cut down on it through an incision in the loin. The kidney was examined and found to be healthy while the tumor could be felt within the peritoneal cavity. This was opened by prolonging the incision forward and the tumor was found to be the spleen. It was lying well down in the left iliac fossa, its upper end being opposite the hilum of the left kidney and its notch lying against the anterior superior spine of the ileum. A broad pedicle in which were two large branches of the splenic vein and the splenic artery extended from the hilum to the neighborhood of the hilum of the left kidney. In fact the veins were in the perirenal fat and it was the damage done to these in the necessary manipulations that made it safer to remove than to anchor the wandering organ. The vessels were ligatured without difficulty, the pedicle then tied en masse and the organ which was nowhere adherent removed. About a pint of blood escaped from it. The wound was drained. The operation lasted 1½ hours and there was considerable shock which was combated with saline enemata and strychnia. The same night bone marrow extract ʒii every four hours was begun. Abdominal pain and distention associated with some nausea and constipation, and a rise in temperature and pulse rate were features of the first few days following but were relieved by purgation and enemata. The drainage tube was removed on the fourth day and the stitches by the end of a week, but the discharge, sanguine purulent continued for some time.

A blood count on the ninth day showed 2,990,000 reds and 8,800 leucocytes. Of these 75 per cent. were polymorphonuclears, 12 per cent. lymphocytes, and 12 per cent. large mononuclears and transitional. Eosinophiles formed less than one per cent.

As the bone marrow extract nauseated her very much haemaboloids was substituted on December 9 and has agreed very well.

On Dec. 14th she sat up, and on the 27th was out of bed.

A blood count Dec. 29th showed 3,250,000 reds and 8,000 leucocytes.

Polymorphonuclears formed	67 per cent.
Large mononuclears and transitional formed	17 "
Lymphocytes	14 "
Eosinophiles	2 "

Jan. 10th, the day before she left the hospital and the 55th after the operation her blood showed 4,250,000 reds, 8,000 leucocytes and 50 per cent. of haemoglobin.

Lymphocytes were increased in proportion to 25.5 per cent. Polynuclears formed 66 per cent. and large mononuclears and transitionals 8.5 per cent. A month later she was seen at her own home and a blood count showed 3,900,000 reds, 7,300 leucocytes and 35 per cent. of haemoglobin. The decrease was undoubtedly due to poor nourishment and lack of medicine.

Polynuclears formed	59.5	per cent.
Lymphoycytes	27.2	"
Large mononuclears and transitionals	12	"
Eosinophiles	2	"

On Mar. 28th, 4½ mos. after the operation she showed a marked improvement in appearance under renewal of her tonic and attention to digestion.

Red corpuscles numbered 4,325,000, lencocytes 12,000 and haemoglobin 40 per cent.

Polynuclears formed	61	per cent.
Lymphoycytes	26	"
Large mononuclears	12	"
Eosinophiles	1	"

No nucleated reds or unnatural forms of leucocytes have ever been noted. The lymphatics glands, at least the superficial sets show no enlargements. The operation has been entirely successful in relieving the distressing symptoms which had reduced her to the condition of an invalid. The spleen shows only a general fibrosis.

Date.	Haemoglobin.	Red Corp.	Leucocytes.	Polymorph	Lymph.	Large Mono. & transi'al.	Eosino.
	per cent.			per cent	per cent.	per cent.	per cent.
Nov. 15th, 1899..	40	3,800,000	12.000	65	17	17	1
Nov. 23rd, 1899..	.....	2,990,000	8,800	75	12	12	1
Dec. 29th, 1899..	.....	3,250,000	8,000	67	14	17	2
Jan. 10th, 1900..	50	4.250,000	8,000	66	25	8	1
Feb. 15th, 1900..	30	3,900 000	7,300	59	27	12	2
Mar. 28th, 1900..	40	4 325 000	12 000	61	26	12	1

DR. TEMPLE'S CASE OF SPLENECTOMY.—The patient, a married woman, aged 30, was brought to the hospital for operation two years ago, in an extreme condition of anaemia and emaciation. She had been suffering for about six weeks with an acute attack of abdominal pain associated with high fever and marked prostration, which had been treated symptomatically by her physician as an attack of pelvic peritonitis. At the time of entering the hospital her temperature was about 102° and there was marked gastric disturbance. Her abdomen was rigid and somewhat distended, but not excessively tender. Examination under an anæsthetic revealed a lump about the size of two fists well over in the right iliac region, smooth, firm and rounded and not moveable. The

uterus and ovaries were free and normal. A diagnosis of tumor of, or in the neighborhood of the right kidney was made and after rallying the patient by a few days of rectal feeding an exploratory incision was made in the median line. It was then found that the tumor was the spleen slightly enlarged, and adherent to neighboring structures in the right iliac fossa. Its mesentery, in which were enormous vessels, could be traced for several inches upwards. The organ was removed by breaking down adhesions and tying the vessels separately and the wound closed. There was much shock, although the operation did not consume a half hour and there was no haemorrhage, but the patient rallied under stimulants and saline enemata. For three days she went along nicely without a rise of temperature and taking nourishment well; but on the fourth day her pulse rather suddenly became very weak, and she died in a few hours. Examination of the abdominal cavity after death showed that there had been no haemorrhage or peritonitis, so she must have succombed to heart failure due to extreme anæmia.

There was in this special case of wandering spleen no history to account for its displacement The patient never had had malarial symptoms, nor could any history of traumatism or sprain from lifting be had. She had had no previous attack of pain, in fact had been a comparatively healthy woman. No blood examination was made. It is almost certain that this acute attack was due to torsion of the long pedicle as the spleen was almost gangrenous and marked everywhere with haemorrhages into its substance. There was a decided perisplenitis.

HISTORY OF OPERATION.—The operation is not by any means a new one, in fact it dates back to the time of Queen Elizabeth. Splenectomy was first done, experimentally, on a dog early in the 17th century by two London surgeons, Gillam and Reid. The dog we are informed grew mangy in 6 weeks.

Later, in 1664, the Hon. Robert Boyle and Dr. Jolive repeated the experiment but with more success. Dr. Boyle tells us the story quaintly thus: "That it might not be pretended the operation was unfaithfully or favorably made, I did part of it myself and held the spleen (which was the largest in proportion to the body that ever I did see), in my own hand while he cut asunder the vessels reaching to it that I might be sure there was not the least part of the spleen unextirpated and yet this puppy in less than a fortnight grew not only well, but as sportive and wanton as before."

The experiment was reported in 1714 by Hüster in Germany and in 1719 in Italy. Numerous experimenters showed that the operation was seldom fatal. Zaccorelli case, 1540, is always quoted as the first instance of its performance on a human being, but his account is boastful and doubtful, Viard, of Paris, is said to have removed an injured spleen in 1581. There are other doubtful cases. E. O'Brien, of Dublin, certainly removed one for injury in 1814 and the patient was well months after. The operation was done by Gullenbauman, 1826, by Küchler and by Volney Dorsay in 1855, by Spencer Wells in 1865, and Bryant in 1866. Since then its successful performance has often been recorded. Experi-

ence has limited the number of cases suitable for operation. Statistics show the removal of the leukaemic spleen to be all but invariably fatal. Spanton reported 25 cases with 24 deaths.

Primary carcinoma or sarcoma of the organ are almost unknown. The same can be said of primory tuberculosis. Moreover, according to Mayo Robson, and other authorities, a wandering spleen can be successfully fixed in position, with a relief to the patient of the dragging pain which is so constant in some cases. In many such cases, however, the organ has undergone a permanent fibrosis and its functions are probably already performed by other glands for its removal is certainly not followed by injury to health and may be much easier than fixation or partial resection. Cysts of the spleen are preferably treated by excision of the whole ogran unless very large adherent or inflamed. The mortality under the a sepsis is quite small. Spanton gives it by periods thus:

Between 1866-75	75	per cent.
" 1876-85	59.25	"
" 1885-95	16.21	"

Ledderhose reports 14 cases with 12 recoveries, Stanton 9 cases with 9 recoveries.

Dangerous haemorrhage from or severe injury to the spleen, are indications for excision, Nicosbauum reports 26 cases for this purpose with 10 recoveries, Hayden 21 cases, all of whom are said to have done well.

Before leaving this interesting organ of which we know so little I would only say that two results of the removal of the spleen described in many works on physiology, viz. a decrease in the red corpuscles and haemaglobin and an increase in the lymph glands are not present in this case. Contrary to many observers the percentages in leucocytes have not varied to any great extent from the normal.

That the tumor was not diagnosed as spleen in either case suggests the utility of determining the presence or absence of normal splenic dulness in obscure tumor of the abdomen. As to whether the enlargement of the spleen was the cause or effect of the displacement I cannot say. Its relationship to pseudo-leukaemia I leave to your discussion.

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TREPHINING AND NEURECTOMY FOR A CASE OF INFANTILE PALSY.

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G. T. aet 30, Canadian. Family history unimportant. Personal history: Measles, with good recovery at 6 mos.

At 10 mos., when well grown and walking about, he developed an abscess under the left ear (no otitis media) which at the end six weeks after free suppuration slowly healed up. Just about this time a fit occurred one morning as he lay in the cradle—only one—and from which he soon recovered. Mother is positive that there was no paralysis; that he never ceased walking, but in a month or so she saw that the left foot swung outwards when walking, and that soon afterwards the left arm ceased to be used. There is no evidence of atrophy or paralysis in the arm at this date. Then a spasm began to show, and before he was two years of age both leg and arm were spastic and ataxic. From that date to the present they have been growing worse, with no periods of intermission. The face sometimes twitched when arm was very troublesome. He was at school from the 5th to the 15th year of his age, and never learnt any trade. There was no violence of temper, uncleanly habits, cranial irregularities or other evidences of idiocy. As to habits, he has chewed tobacco freely since 12 or 13 years of age. Alcoholic drinks used in moderation. Says that they quiet the hand and leg but make them worse afterward. Present condition. Well nourished and healthy, all body systems normal except the nervous system. Intellect. Normal, though ill-developed. Happy and good tempered. Sensory functions normal. Spasm, if severe, accompanied by much muscular pain, especially in the deltoid trapezius and biceps.

Motor functions. Spasms of the left side, affecting chiefly muscles of the side of the face, sterno mastoid, clavicular portion of pectoralis major, upper part of trapezius, the deltoid and biceps, the flexors and pronators of the forearm and hand: in severe spasm the rectus abdominis: also the left leg shows a mild equino varus, some contraction and spasm of the gastrocnemius. In a severe spasm the head and neck are drawn downwards and to the left and the face somewhat rotated to the right, the left arm thrown up and across the vertex, upon which a callus had developed from continued tapping of the radius; the body slightly bent forward and to the left and the left thigh flexed on the body and the leg on the thigh with the foot in extension. The spasm is clonic, exaggerated by excitement and disappears during sleep. It is accompanied by inco ordination but never by loss of consciousness and is continuous, never epileptiform.

Diagnosis. Meningeal hemorrhage probably causing the fit at 10 mos., due possibly to thrombosis of a cerebral vein by extension from

lateral or petrosal sinuses and internal jugular vein, where it may have originated from the untreated abscess.

Treatment. Bromides and iodides in massive doses had no apparent effect and on Jan. 24, 1900, Drs. Bingham and Bruce trephined over the motor area involved and found the pia matted down to a dark and apparently sclerotic area of cortex surrounded by a softened area. The cortex of motor areas for face and arm were removed for depth of about one-half inch. The arm remained paralyzed for a few hours after recovery from the operation, but by the third day the spasm had gradually returned and was as bad as ever. On the 13th Feb., 20 days, Dr. Bingham, assisted by Dr. Bruce, performed neurectomy. An incision was made in the left axilla and parts of the median, musculo cutaneous, musculo spiral and circumflex nerves were excised. As the patient was taking the anæsthetic nicely, it was decided to operate at the same time on the spinal accessory. An incision was made from the mastoid process down the anterior border of the sterno mastoid and after a brief search the nerve was secured and excised.

Feb. 14th, morning, temp. 101°, pulse 100°, resp. 20°.
" 16th " " 99°, " 90°, " 20°.

Examination on Feb. 16th shows:—Sensation is present in the shoulder and arm, also on the inner side of the fore-arm, gradually becoming less as the wrist is approached. Sensation is absent from the wrist to a point about three inches above on the inner side, and if lines be drawn from that point to the ext. condyle of the humerus before and behind, the skin on the outer side of those lines lacks sensation. In the hand sensation can only be elicited over the thenar and hypothenar eminences and on the front of the 5th and half of the 4th fingers. Motion is entirely lost in the arm, fore-arm and hand. The deltoid, trapezius and sterno mastoid are also quite functionless. The clavicular portion of the pectoralis major is still spasmodic and to a less degree the teres major. The temperature varies considerably in various patches on the hand and arm. The tongue is protruded to the left and the left leg is, according to the patient, more spasmodic than before. The wounds in the head and neck have healed, that in the axilla is prevented from closing by the contraction of the pect. maj.

Condition on Feb. 28th :—

The patient has been complaining of great pain which he refers to the hand, and generally to a particular finger. He still says the left leg is worse than before the operation. This is not apparent. Probably, his arm being quiet, his attention is drawn to the leg. On examination no sensation can be elicited below the elbow except along the upper and posterior part of the ulna for about 3 inches. The limb feels cold and marked atrophy has taken place, bringing into prominence the contracting portion of the pect. maj. The left shoulder is raised much higher than the right. The arm forcibly drawn inwards and forwards. The head

inclined forward and to the left. His gait is, if anything, better than before the operation, and strabismus hardly noticeable. General health, fair.

A CASE OF INTESTINAL PERFORATION IN TYPHOID FEVER. OPERATION. DEATH.

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The recent more or less successful results attending the employment of surgical operation in the treatment of this almost invariably fatal complication of typhoid fever make the report of the following case of some interest. W. B., aged 33, was admitted to the medical clinic of Dr. H. B. Anderson, St. Michaels Hospital on the evening of Dec. 8th, 1899, suffering from typhoid fever, having been ill about one week. His temperature was 103, pulse 100, respiration 24; tongue clean, bowels regular: the blood gave a distinct Widal reaction. The case ran an ordinary course, temperature ranging from 101 to 104, pulse from 88 to 98; no delirium, no tympanites or other abdominal symptoms.

The patient was put on ordinary treatment, fluid diet, ac. nitro-mur. dil., small doses of quinine and strychniã, with baths to control the temperature.

At midnight on December 13th a slight hemorrhage from the bowels occurred, followed by another at 5 a.m. These were treated by the application of ice to the abdomen and the administration of plumbi acetas and opium. The hemorrhage did not recur after this time. Temperature was now 102, pulse 80. At noon on the 13th, patient had a slight chill and the evening temperature rose to 103 2/5, pulse 100. At one o'clock on the morning of the 14th 6 days after admission and patient's stool was slightly tinged with blood, and he complained of severe abdominal pain, with tenderness on pressure. Temperature 103 1/5, pulse 120. Morphine was administered hypodermically and turpentine stupes were applied to the abdomen. At 12 o'clock on the 14th temperature was 100 2/5, pulse 84, respiration 36. The patient began to perspire freely, was breathing superficially, and lying upon the back with knees drawn up. The face had a sharp, pinched, anxious expression, the tongue was narrow and red, the pulse small and thready. The abdomen was distended and tympanitic, the liver dullness having disappeared in front. The abdominal pain and tenderness had become less acute than on the previous day.

The diagnosis of perforation having been made, immediate operation was advised by Drs. Anderson, Dwyer and McPhedran in consultation. This, however, could not be arranged for until 8 o'clock in the evening.

20 hours after the first symptoms of peritonitis had appeared. Patient's temperature was now 101, respiration 30, pulse 102, but very small and weak, and he was evidently sinking rapidly. Dr. Teskey operated, assisted by Dr. C. A. Temple. Chloroform was administered, and a median incision about 3 in. in length was made below the umbilicus. The caecum was sought for as a guide to the ileum, as the usual seat of perforation. This portion of the greatly distended gut was withdrawn, and being grasped in both hands like a pneumatic tire was gone over inch by inch, until gas was found to escape from a very small perforation about 10 inches above the ileo caecal valve. The opening was carefully closed by Lembert sutures. About 3 inches from this perforation a dark, gangrenous looking area the size of a nickle appeared through the peritoneal coat, covered with fibrinous exudation. This portion was invaginated and the edges bordering on the area were brought together over it by sutures. The peritoneal cavity contained a large quantity of sero-fibrino purulent exudation and the peritoneum, both parietal and visceral was intensely engorged. No faecal matter had escaped, though the gas in the peritoneal cavity had an offensive odor. The peritoneal cavity was thoroughly flushed with normal saline solution and the abdominal wound closed. During the operation, which lasted 40 minutes, the pulse rose to 160, and the patient was much collapsed. After the operation it the pulse fell to 118, and for a short time the general condition improved. Subcutaneous injection of normal saline solution, one quart, was made in the pectoral region, and strychnia and whiskey were administered. During the night, however, the patient became delirious, abdomen became greatly distended, temperature rose to 103 4/5, respiration 40, pulse 150. He perspired freely and vomited a considerable quantity of dark brownish material at intervals. He continued to grow worse and died on Saturday at 6.45 o'clock p.m.

An autopsy was made 4 hours post mortem, by Dr. Dwyer. Operation wound had begun to unite. There was no excess of peritoneal fluid and no adhesions. The peritoneum was rather hazy but the vascular injection was much less than at time of operation. (post mortem change) Adhesions had formed between the parts brought into apposition at the time of operation. Examination of the bowel showed several ulcers in the ileum, near the ileo-caecal valve. There were no ulcers in the appendix nor in the large intestine. Other organs presented nothing worthy of special mention. As I believe this is the first case of operative procedure in Typhoid perforation reported before this society, it was deemed advisable to give a resumé of the literature on the subject with a view to elicit discussions as to the value of the mode of treatment.

Perforation of the bowel is the most serious accident that can occur during an attack of typhoid fever. As to its frequency Dreschfeld says it occurs in 2½ to 3 per cent of all cases. It occurred in 5.7 per cent of 2,000 autopsies in Munich on Typhoid cases and in 4,680 fatal cases tabulated by Fitz the mortality from perforation was 6.58 per cent. It occurs oftener in mild than in severe attacks and is particularly liable to occur in the ambulatory form. It may happen as early as the 8th day (Osler) or as late as some weeks after the disappearance of the fever, though it is most likely to occur during the third week of the

disease. The perforation is usually within the last foot of the ileum. In Fitz's table, in 81 per cent the opening was in the ileum, in 12 per cent in the large intestine and a few instances in the jejunum, vermiform appendix or Meckel's diverticulum.

As regards prognosis Murchison placed the mortality in cases of perforation at 90 per cent or after general peritonitis had set in, at 95 per cent. The prognosis appears to be more favorable in children. Thus Montmoullin reports seven cases with three recoveries—as Jacobi says, "a proportion of spontaneous recoveries able to arouse the jealousy of any operator." Taken all in all, however, the mortality in cases treated medically statistics show to be about 90 per cent, so that if the results of operative interference so far reported are reliable, much better results may be expected from resorting to it.

According to Finney operation was first done by Lucke, of Strasburg, in 1887, 12 hours after the onset of symptoms of perforation, but the patient died. In the same year Bonticon, of Troy, N. Y., operated on a case 36 hours after the appearance of symptoms with the same result. Up to March, 1897, Finney had collected reports of 52 cases, of which 17 recovered—32 per cent. Marked symptoms of collapse and shock with weak, rapid pulse were present in 27 of these cases at the time of operation, and in all the patients' condition was described as distinctly unfavorable, except in 5 where it was said to be fair. In 13 of the cases, marked general septic peritonitis with the presence of foul pus was reported. Dr. Weir, of New York, has tabulated 49 cases with 13 recoveries—27 per cent. From Russia we have reports of 71 operations with 17 recoveries—24 per cent. Dr. Westcott has compiled a list of cases complete to Jan., 1898—83, operations with 16 recoveries—19¼ per cent.

Dr. W. W. Keen, Philadelphia Medical Journal, Nov. 4th, 1890, discusses the surgical treatment of perforation of the bowel in typhoid fever from four standpoints which may be taken to represent the latest views upon the subject from the position of the surgeon. These are summarized in the Columbus Medical Journal as follows:—

First. Shall we operate at all cases of typhoid perforation. He answers the question in the affirmative. Of 150 cases reported by various surgeons the recovery rate is 22.7 per cent. The recovery rate in unoperated cases, according to Murchison, is only 5 per cent. The writer is lead to believe that if physicians were alive to the good results of operation, and called the surgeon promptly the recovery rate would be 30 per cent., or possibly one in three.

Second. In what cases shall we operate? To this question the writer says that he would operate in every case of perforation unless the condition was such that recovery was evidently hopeless.

Third. When shall we operate? This discussed at some length. From the statistics given the best results follow operations made from eight to twenty-four hours after the perforation. To quote from the author: "It is possible that larger statistics will change my views to

some extent, but I doubt if operations done during the presence of severe shock will ever prove as successful as those undertaken as quickly as possible after primary shock has passed away."

Fourth. How shall we operate? The author regards the most important advance in the technique as the use of cocain instead of the general anesthetic. He quotes Cushing as stating: "I think local anaesthesia is a great step in advance. I shall never give general anesthetics again in typhoid."

The incision is best made in the right linea semilunaris or through the rectus muscle. The perforation should be sought first, in the ileum; secondly, in the adjacent caecum and appendix, and, third, in the sigmoid, where it occasionally occurs.

The cleansing of the peritoneal cavity is an important step. This may be done either by flushing or wiping according to the judgment of the operator at the time. The conclusions of the author are as follows:

1. The surgeon should be called in consultation the moment that any abdominal symptoms indicative of possible perforation are observed.

2. If it be possible to determine the existence of the preperforative stage, exploratory operation should be done under cocain-anaesthesia before perforation shock, and sepsis have occurred.

3. After perforation has occurred, operation should be done at the earliest possible moment, provided:

4. That we wait till the primary shock, if any be present, has subsided.

5. In a case of suspected but doubtful perforation, a small exploratory opening should be made under cocain to determine the existence of a perforation, and if hospital facilities for a blood count and for immediate bacteriological observation exist, their aid should be invoked.

6. The operation should be done quickly, but thoroughly, and in accordance with the technic already indicated.

7. The profession at large must be aroused to the possibility of a cure in nearly, if not quite, one-third of the cases of perforation, provided speedy surgical aid is invoked."

From the results obtained there can be little doubt that the proper treatment in cases of perforation where the diagnosis is clear is early surgical operation. The suggestion of exploratory incision in doubtful cases and in the so called preperforative stage, however, I do not think will commend itself to many physicians. There are as yet no symptoms or signs by which impending perforation can be diagnosed and the adoption of this line of treatment might lead to many unnecessary and harmful operations and so bring discredit on a method of treatment of undoubted advantage in suitable cases.

TINEA VERSICOLOR.

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Tinea versicolor, or as it is else termed "Trichophytosis," is not a rare cutaneous disease. But the uncertainty of its recognition, the oscillation and ineffectiveness of its treatment, render it a source of annoyance to both the physician and patient. The latter convinced of the futility of the treatment, very often drifts into the hands of the charlatand; the former at a loss to make a creditable diagnosis and incognizant of the means to abate the disease, thus considerably embarrassed, he finally becomes negligent and indifferent towards the treatment.

It has been my sole labor for the past year, to gather all the literature possible on this subject, which—together with cases of tinea versicolor, occurring both in the clinic and my private practice—enables me to draw the clinical picture of the disease, to accurately as possible dwell upon the diagnosis and to outline the method of treatment as advocated by modern dermatologists. The symptomatology and diagnosis of this variety of tinea will be illustrated at the conclusion of the article by cases, witnessed in the dermatological clinic, where I act as an assistant.

Tinea versicolor is a cutaneous affection due to a vegetable parasite —the microsporon furfur, invariably present in the epidermis, and is characterized by the gradual appearance of yellowish, brownish or opalescent patches of various shapes and sizes, and situated superficially in the stratum corneum.

Etiology.—The direct cause is the vegetable parasite, mentioned above. Eichstadt was the first to demonstrate the parasitic nature of this disease. In 1856 the microsporon was isolated and examined microscopically. Tinea veriscolor is but mildly contagious. The manner of invasion of the integument by the parasite, is a matter of supposition. The air is most probably the abode of the parasite and its spore, which cling to the clothing and skin. Kaposi claims that the spores are contained in the water in which the clothing is washed tenaciously adhering to them and are thus finally conveyed to the cutaneous surface of men. The relation of tinea versicolor to tuberculosis is not known; as a fact, however, it is frequently met with in the consumptives. Both sexes are equally attacked by this parasite, but in my clinic the female sex was predominating. Anæmic individuals and those whose general condition is below par, furnish a good soil to the parasite and its spore; but even robust people are by no means exempt. The age most prevalent to this affection is from 20-30, although cases have been observed in extreme youth and adolescence. A girl aged 12 presented herself in the clinic with the eruption well out.

Symptoms.—As mentioned above, the microsporon invades the epidermis but superficially, the hairs and nails being exempt from it. Its first appearance can be noticed by the development of furfuraceous macules, of a yellowish or brownish hue, at times even assuming an

opalescent tint, the size and shape of which are extremely irregular and variable. It may develop in the above described manner, or else be preceeded by the eruption of pea-sized, oval, erythematous macules, somewhat raised above the surface. The macules are usually situated on the neck, shoulders and upper part of the chest, but in rare instances may also be seen on the abdomen, the back, arms, thighs and legs. As a rule, however, they spare the extremities and seldom, if ever, appear upon the face. The patches are either isolated, not exceeding eight or ten in number, or else so numerous and confluent, as to almost cover the entire upper part of the chest. In size they vary from a small pea to a 25 cent piece. They exhibit a tendency to extend at the periphery, to coalesce with each other and form large, irregular patches. Owing to the indefinite fawn-colored tint the lesions manifest, the French adequately term it "cafè au lait" (coffee and milk color). Tinea versicolor never produces any constitutional disturbances; even the lesions by themselves are unattended by any subjective symptoms. The integument in the immediate vicinity rarely exhibits any inflammatory symptoms, but seems on the whole to be tolerably healthy. Later in the disease the macules become covered with thin, furfuraceous scales, which are adherent, fine and branny and can be removed by rubbing the lesions. They may be either very abundant or scanty, loose or closely adherent. After bathing the patches, the scales become less numerous. In unclean subjects they are very significant and of a dirty iridescent color. In individuals perspiring freely, the scales undergo maceration and form pasty masses or rolls, oftentimes becoming embedded in the folds of the integument. In plethoric persons and those suffering from Hyperidrosis, especially in the summer, the lesions give rise to a great deal of annoyance by manifesting subjective symptoms as itching and burning. The latter, however, as a rule is never present in an ordinary case of tinea versicolor unaccompanied by the above mentioned conditions. The disease has been frequently observed in tuberculous individuals, and the question, if tinea versicolor were really not a tubercular affection of the skin—a variety of Lupus, could easily be promulgated, provided the existence of the specific microsporon furfur could be denied.

The disease shows a tendency to re appear if once removed. Thus we often see the lesions disappear under treatment more readily in the winter months than in the summer or autumn, so that at times we fancy the patient to be completely cured, when insidiously the lesions return at about the same time the next winter. There is a patient in my clinic, who has had four recurrent attack of this disease in the manner described above. We rarely see Trychophytosis in persons past the age of fifty. As regards the course of the affection, it must be admitted, that it is progressive and steady when left alone; under judicious treatment however the rapidity of its extension can be lessened and the lesions finally made to disappear. It seems to me, that brunnettes are more prone to the disease than blondes. A rough, harsh skin is a favorable medium for the invasion of the microsporon. If tinea versicolor has first manifested itself in the first or second decade, it as a rule persists with slight modification until the thirtieth or fortieth year of life,

when it gradually disappears, leaving behind a vitildigo, corresponding to the size and shape of the primary lesions. It need not be mentioned, that in the fair sex this disease is a source of great annoyance and anxiety, especially to those who move in the better circles of society. The rich in palaces, among excellent hygenic surroundings, and the poor in the hut, rarely partaking of baths are equally affected with it. Those predisposed to cutaneous disorders, in the so-called "cutaneous diathesis," in the scrofulous and eczematous, tinea versicolor is more likely to appear, then in individuals with a sound integument.

Diagnosis.—The diagnosis is by no means so easy as it has been supposed heretofore. There are a legion of affections simulating tinea versicolor. Therefore the principle features of the disease must clearly be brought forth, at the expense of minor points, unnecessary and burdensome to the general practitioner. As a rule the lesions are situated on the neck, shoulders and chest and rarely on those parts exposed to light. The color of the lesions is very suggestive, consisting of a mixture or rather a variety of hues, a fawn, which can approriately be termed opalescent, or as the French calls it a "café an lait" tint. The spots or macoles are usually elevated above the surface; when they are exposed to heat, they exhibit an erythemations tendency. Lastly the delquamative nature of the lesions should form the most important diagnostic feature of the disease. Finally the microscopic examination and the detection of the microsposon furfur, leaves no doubt as to the real character of the disease The absence of subjective symptoms as burning and itching should be taken into consideration in making a diagnosis. In excessive perspiration it is true these lesions may undergo maceration with subsequent inflammation and might be mistaken for eczema, yet the subjective symptoms are as a rule insignificant to warrant a diagnosis of eczema, and furthermore eczema never appears on the parts usually involved in tinea versicolor. Chloasma may at times be mistaken for tinea versicolor. If we however bear in mind, that it is the rete mucosum, which is excessively pigmented in chloasma, while tinea versicolor is an affection of the corneous layer, we will never be at a loss to differentiate between these two diseases. The patches in chloasma—furthermore—are smooth and not elevated, while the macules of tinea versicolor are raised above the surface and covered with fine furfuraceous scales. The parts involved in these two diseases are also different, chloasma occurring more frequently on the face, a region, seldom, if ever attacked by tinea versicolor. Vitilligo can hardly be mistaken for tinea versicolor. Although a sequel to the latter, it presents features distinctive from the former disease. The patches of vitilligo are white, while the borders pigmented; they are never elevated, nor do they exhibit the furfuraceous scaling. Lentigo invades the exposed portions of the body, is not attended by scaling and does not present the hue, peculiar to linea versicolor. As a rule, the microsporon furfur is not known to thrive on parts exposed. Macular syphilide may give rise to considerable perplexity in the diagnosis; its color however is not so intensely yellow, as that in tinea versicolor; neither do the macules show any tendency towards elevation or desquamation. They are rather of a

coppery tint, and the history of the case will finally clear up the diagnosis and disperse any doubts present. Syphilitic macules on the other hand may occur upon any portion of the cutaneous surface, while tinea is limited to the regions described above. Other manifestations of syphilis are usually concomintant and may thus aid in establishing the diagnosis. Desquamation in macular syphilide is not altogether frequent and the microsporon furfur cannot be detected microscopically. In all doubtful instances the microscope should decide as to the real nature of the lesions.

Pathology.—The lesions of tinea versicolor contain the spores and mycelium of the microsporon furfur. The parasite extends to and penetrates the stratum corneum, but never attacks the rete mucosum and the hairs and nails. Each mycelial thread seems to be intricately interwoven with the epidermic scales. The spores aggregate into clusters. If a portion of the scales be removed from the macule and moistened with a drop of a solution of potassic hydrate and then examined under a microscope having the power of 500 diameters, the mycelium threads will be seen to form intricate branchlets, straight or looped, braided or twisted, crossed or curved, vermiform or roseate. The threads are about .0020-.0040 m.m. in diameter and terminate in oval, round or club-shaped spores, either single or in clusters, which vary from .0030-.0090 m.m. in diameter. The spores possess one or more nuclei, which are highly refractive. Some writers claim, that the bacillus tuberculosis is merely a microorganic form of the fungus-microsporon furfur?

Some French writers regard tinea versicolor as a tubercular affection of the skin. Its frequent occurence in conjunction with phthisis pulmonalis has led many to believe that tinea versicolor is but as local symptom of pulmonary tuberculosis.

Prognosis.—Tinea versicolor, although a mild and trivial affection is nevertheless a source of great annoyance to the patient, especially if the latter is one of the fair sex, moving in the better circles of society, where etiquette oftentimes demands an exposure of the upper part of the bust. The disease yields very readily to treatment, provided the latter be faithfully carried out and persistently obeyed to. Relapses are very common, if the parasite is not thoroughly destroyed. Two to three months suffice to eradicate all the traces of the affection.

Treatment.—The treatment has been unsatisfactorly so far, not on account of ignorance in this special form of therapeutics, but of the uncertainty with which a diagnosis is usually made and the variety of skin affections with which tinea versicolor is confounded; hence the consequence has been either a complete or partial failure in the cure of this disease.

French dermatologists advocate sulphur as the remedy par excellence, either in the form of ointments or baths. Mercurial ointments, especially unguent. hydrarg. nitratis is lauded by many to affect a cure. That the above remedies are anti-parasitics there is no doubt, and they have often brought about favorable results. Corrosive chloride of mercury and mercurial baths have been used with the same happy effect.

Other anti-parasitics, as iodine and carbolic acid have been tried in different strengths and various forms. In spite of all measures, this affection seems to resist all efforts. The Germans advise "cleanliness" as the only curative agent, frequent changes of underwear, daily ablutions with soap and water are imperative therapeutic measures with the Germans. They recommend the application of sapo viridis to the site of the lesions, which is left in situ for 24 hours, after which the affected region is washed with an alkaline water. A 5 per cent. solution of sod. hyposulphite is then applied. Oftentimes sod. hyposulphite baths seem to be very efficacious. A 25 per cent. chrysarobin ointment has proved to be an excellent remedy. Sulphurous acid ℥j to the oz. of water or else in ointment has also been used and doubtless is a very effective parasiticide. The ointment of hydrarg. ammoniat has in many obstinate cases been followed by good results. I frequently use the following formula:

℞ Natr. biborat.
Natr. hyposulphites āā ℥iv.
Aq. rosae ad ℥iv.

Sig. Apply with camel's hair brush three times a day followed by the application of sapo viridis and subsequent washing with an alkaline water, after which the skin is thoroughly rubbed.

Prof. Shoemaker advocates the copper oleate, either diluted with oleic acid or made into an ointment of the strength of 10–20 per cent. Before applying the above, however, he uses a wash composed of menthol, glycerine and alcohol, which has the advantage of both dissolving the the sebum and softening the epidermis as well as acting as a mild parasiticide. He claims that the copper oleate not only acts superficially but it also penetrates the epidermic cells and this arrests the development of the parasite. Other authors confirm the above and regard the oleate of copper as the remedy par excellence. One patient in my clinic was permanently cured by the application of an ointment of the oleate of copper, in the short period of three weeks. Only a small quantity of the ointment should be applied to the diseased surface as the oleate is very penetrating and spreads with rapidity to other parts surrounding the affected area. In conjunction with the above I use an anti-parasitic lotion, preferably the sod. hyposulphite in a 5–10 per cent. solution. I also apply the latter beyond the deceased area, in order to prevent the spreading of the parasite.

This treatment should be used until the color and scaling have totally disappeared and a new, healthy epidermis is formed. Some Russian physicians employ a plaster of Pix liquida, which they allow to remain in situ on the parts affected for a week, after which time it is removed, and the skin underneath is then noticed to exhibit a healthy appearance.

Among other remedies which have been used with more or less success may be mentioned alcohol, beta-naphthol and boric acid in ointment form; carbolic acid in the form of a lotion or ointment; a 10 per cent. ointment of resorcine and 1 per cent. ointment of picrotoxin, solutions of chloral hydrate ℥i to the ounce. In the anaemic, iron in full doses should be administered, and in young people with a scrofulous diathesis cod-liver oil and the syrup ferri iodidi. I have seen cases of tinea

versicolor disappear after the abstraction of a quantity of blood from the affected regions by wet cuppings. Applications of sod. hyposulphite in the form of an ointment, of about the strength of ℥ii to the ounce of lanoline, has been warmly recommended by Prof. Wm. A. Hackett. Listerine and borolyptol, either in full strength or diluted, may be employed as an antiparasitic in conjunction with the oleate of copper.

Case I.—E. B., aged 15, schoolgirl, Russian by nationality. Family history reveals a tendency to repeated attacks of sore throat. Past history, negative. Status presens: She is anæmic and delicately built, brunette, of sedentary habits; menstruation irregular and painful; suffering considerably from headaches; appetite poor and bowels constipated. Brownish and yellowish macules renal shaped, from the size of a bean to that of a 25 cent piêce, situated on the anterior part of the neck and upper portion of the chest; several patches are irregularly distributed over the mammae. The lesions are covered with fine scales, which are readily detachable. The macules are somewhat elevated above the surface. No subjective symptoms present. Duration of the affection, about two months. Appeared first as erythematous spots, according to the description of the patient. These spots were gradually extending from the periphery.

Diagnosis.—Tinea versicolor.

Treatment.—She was put on the elixir of iron, quinine and strychnine phosphates, thrice daily, and recommended to considerably partake of albuminous foods, with small rations of fats and starches; outdoor exercise and frequent bathing to which a small quantity say an ounce of sulphur was added. An ointment composed of the following was prescribed:

℞ Ichthyolis, ℥i.
Natr hyposulphis., gr. xxv.
Lanolini, ad ℥i.; ft. nug.

Sig.: Apply twice a day. In the morning the patches were washed with green soap and hot water. The treatment was continued for about four weeks. After this time the lesions grew fainter in color, and two weeks later the disease was brought to a conclusion. Her general condition also improved perceptibly.

Case II.—Ch. M., 28 years of age, merchant, Russian by nationality, married.

Family History.—Negative.

Past History.—When a child he was suffering from some sort of skin disease.

Status presens.—Patient is of a robust stature, of a decidedly sanguine temperament and of a dark complexion. He is a sufferer from habitual constipation. The lesions came on insidiously, being noticed by him only after the detachment of a few scales. He was frightened to the utmost lest it might prove dangerous. The lesions consists of furfuraceous, brawny and scaly patches, situated on the anterior inferior portion

of the neck and varying in size and shape unaccompanied by any subjective symptoms. The patches are considerably elevated above the surface and the contiguous skin harsh and rough.

Diagnosis.—Tinea versicolor.

Treatment.—In order to obviate the habitual constipation I advised him to abstain from a too liquid diet for some time and try oatmeal for his breakfast dish. Pickles and salted meats were forbidden, as well as tea and coffee, which patient was in the habit of using freely. I put him on the fl. extr. of cascara sagrada 20 min., thrice daily. For the cutaneous lesions I prescribed the following:

℞ Cupri oleatis gr. XL.
Petrolati ad ℥i.; ft. nug. sig.

Sig.: Apply morning and evening with a camel's hair brush, followed by briskly rubbing the patches every morning after washing them with green soap and water. Under this treatment the lesions grew fainter and finally totally disappeared in less than five weeks. It should not be forgotten that coincident conditions, as those mentioned above, demand appropriate treatment. As a general rule the carbohydrates should be avoided not only in tinea versicolor, but in all forms of skin diseases. Of course there are exceptions even to the above.

Night-Terrors, Symptomatic and Idiopathic, with Associated Disorders in Children

Guthrie (*Clinical Journal*, June 7, 1899) concludes a paper on the above subjects as follows:

1. Night-terrors are always to be regarded as evidence of ill-health.
2. They may be divided into symtomatic and idio-pathic night-terrors, according to their origin.
3. Hallucinations of vision are mostly caused by a febrile disturbance.
4. In some cases the content of the dream may throw light on its cause.
5. The character of the dreamer is of more importance than that of the dream,
6. In simple cases simple treatment based on the cause is sufficient; but in idiopathic cases the environment and nature of the patient have also to be considered.

Sedatives are very useful in all kinds of night-terrors: they should be given at bed-time for a few nights. In symptomatic cases paraldehyde in doses of fifteen to twenty minims (for a child of five years) is very effectual. Ammonium bromide may be given in combination with other drugs, such as iron, bismuth, rhubarb, castor oil, gentian and so on, as the case may be. Cardiac stimulants, or bitter or other tonics, may be combined with bromides. Quinine does not agree with highly neurotic children; it should always be combined with hydrobromic acid.—*Canada Med. Record.*

SELECTED ARTICLES

INCONTINENCE OF URINE IN CHILDREN.*

BY FRANCIS HUBER, M.D., NEW YORK.

Few morbid conditions in children are more annoying, or present greater difficulties in treatment, than those grouped under the head of incontinence of urine.

In a measure, this is due to the fact that the causes are numerous and often complex; secondly, relapses are frequent, unless the patients are kept under treatment for some time after apparent cure. The importance of prolonged continuous treatment, even though the patients are under direct control, is well illustrated by the experience of Kerley referred to by Holt. We must not forget that the affection, at times, shows periods of improvement, particularly in summer, to relapse, or become aggravated, when the cold weather appears; the general health deteriorates and sometimes without apparent known cause. In some cases incontinence occurs during the day only, in the greater number at night, in others it is present both day and night.

The diagnosis of the condition is easy; the recognition of the cause, a point essential to correct treatment, is a more difficult problem. In studying the question, the work may be facilitated, bearing in mind the associated neurotic element, by a consideration of the condition of the sphincter, the state of the bladder, and finally the innervation.

Up to the age of eighteen months to two years, depending upon the early training and care in the management of the child, urine and fæces escape involuntarily.

The anal sphincter is the first to gain sufficient power, and usually by the second year the vesical sphincter attains control over the bladder. In some cases the power is never acquired, in others, once gained, it may be lost, for the time being, during illness or lowered vitality. Fortunately, spontaneous cures occur in many rebellious cases about the time of puberty, attending the rapid development of the whole genito-urinary tract. In practice we observe cases in the weak, as well as in those whose muscles are well developed. Debility and anæmia, it will be found, are frequently associated as contributing causes.

A study of the literature, and of a large number of cases, which have come under personal observation, show that the condition is met with in many varied states, but underlying all there is one common factor—a neurotic condition or family history. Too much importance cannot be attached to the neurotic element, often more pronounced because of the associated anæmia. Many of the cases, therefore, must be viewed as a neurosis, pure and simple; in others, one or more additional factors keep up the annoyance and must be removed before improvement takes place.

Frequently, notwithstanding the most careful search, the predisposing cause cannot be detected, and we are then compelled to resort to empirical remedies.

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* Read by title before the American Pediatric Society, Deer Park, June 27, 1899.

In all cases, however, a careful search should be instituted for a possible cause; if one is found, we are in a position to act intelligently, and with greater prospects of success.

Those caused by organic disease of the brain or spinal cord, and malformations of the urethra or bladder, may be referred to incidentally, but do not properly belong to the class under consideration.

Local conditions as small meatus, preputial adhesions, adhesions about the clitoris, irritation and inflammation of the prepuce and glans, inflammation of the urethra, bladder, or rectum, stone in the bladder, constipation, hardened fæces in the rectum, rectal polypi, anal fissure, and pin worms are easily recognized.

The condition of the sphincter must be investigated, the bladder and its contents carefully studied, and finally the state of innervation ascertained. Frequently the sphincter is at fault. Incontinence then may be the result of a weak sphincter, or a part of the general weakness and muscular incompetency, due to a defect in its muscular tone. In the latter instance the patient may be anæmic and poorly developed, or the muscles may be normal, the sphincter alone being involved. No rule can be formulated; the feeble, anæmic, poorly developed may or may not have strong sphincters—apparently robust children, on the contrary, may be affected.

Children who pass urine involuntarily while intent in their play or study, are heedless or suffer from debility of the sphincter and want of mental concord.

When the urine is passed with force some other factor than deficient power in the sphincter must be looked for. Masturbation frequently gives rise to incontinence; the explanation is found in the presence of a chronic inflammation of the prostatic portion of the urethra and neck of the bladder, with increased irritability and sensitiveness of the parts to the presence of urine.

Nocturnal and diurnal incontinence ordinarily suggests a lack of tone in the sphincter and defective innervation. When due to organic disease in the brain or spinal cord, incontinence of fæces is also found, and such cases are usually beyond remedial agents. If due to compression in Pott's disease, recovery takes place when the cause is removed, or disappears as the result of treatment directed to the morbid state in the vertebræ.

In this connection we may profitably discuss the large number of cases occurring in children suffering from lymphoid hypertrophies in the naso-pharynx. A careful study of this part of the subject is important. Many of the patients make the rounds of the dispensaries, and consult various practitioners without permanent relief, until finally the remote cause of the trouble is recognized and removed. To digress for a moment. The question now comes up—what relationship exists between the incontinence and the adenoids? Certainly not reflex. A more logical and inteligent explanation is afforded by a consideration of the *pathological conditions* induced by (*a*) the obstruction of the lymph and blood circulation in the brain; (*b*) the retention of the morbid products of cerebral tissue metamorphosis, and finally (*c*) the changes in the blood from deficient

aeration—all secondary to, and the direct consequence of, the growth of the hypertrophied structures of the lymphoid tissues at the vault of the pharynx.

The valuable anatomical investigation of Axel Key and Retzius has demonstrated beyond question the connection between the sub-dural and sub arachnoid lymph spaces, and the lymph vessels of the nasal mucous membrane.

The hypertrophy of the lymphoid structures of the naso-pharynx and the presence of large adenoids interfere with the lymph circulation. In consequence, the products of cerebral tissue metabolism accumulate in the brain and induce brain fatigue or "retention exhaustion."

Secondly, the general circulation is primarily affected and the cerebral necessarily involved because of the excess of CO_2 and the deficiency of O, the result of defective aeration. Thirdly, the swelling and infiltration obstruct the circulation in both the blood and lymph vessels, particularly the latter. As a result of the impediment at the base, the neighboring portions of the brain are involved, producing effusion and exudation. The meninges and encephalon participate in the morbid process, and induce the mental state so characteristic of the trouble. In some cases, fortunately rare, the changes may be permanent. Guyer of Amsterdam has applied the term "aprosexia" to the mental condition. Such patients are pale, dull, stupid-looking and backward. It is impossible for them to fix their attention, they are usually listless, forget readily, and cannot study without discomfort, the suffering increased by headaches, more or less severe and annoying.

It is not at all surprising that under such circumstances a lack of will power is found with loss of control over the vesical sphincter, the latter further weakened by the existing anæmia, causing diurnal and nocturnal incontinence.

In a number the predisposition appears to be inherited, for it is a common experience to find the children of neurotic parents afflicted in this manner. In one instance all the children of a mother with hystero-epilepsy were affected. In dispensary service such cases are by no means infrequent. In chorea a want of co-ordination between the sphincter and the detrusors is assumed. Occurring as a complication of epilepsy, the underlying cerebral disturbance must be regarded as the factor in the etiology.

Digestive disturbances, late suppers, heavy meals, and the ingestion of large amounts of fluids act as exciting causes. Drinking large amounts of water, particularly at night, immoderate indulgence in weak tea, coffee, and in some instances alcoholic beverages are frequent incidental factors in the etiology. Moderation in this respect is often followed by a disappearance of the disorder.

A short time ago a rachitic child of two and one-half years of age was presented because of the anæmic, flabby state and incontinence. In taking the history it was elicited that the child's diet was chiefly milk, as much as three quarts being taken daily. The amount of milk was reduced and solid food ordered; and advised strych. sulph. and syr. hyp. c. fer. The beneficial effects were soon evident, for the urinary difficulty quickly disappeared.

Independent of the quantity, the character of the urine may excite the bladder, and lead to premature contractions. Large meals, particularly an excess of nitrogenous materials with inadequate assimilation, give rise to increased amounts of urates and phosphates. Excess of urates, phosphates, oxalates or uric acid, highly concentrated urine, and hyperacidity, act in a similar way.

The small bladder found in many occurs as a congenital anomaly or an acquired defect. In the latter case, though not the primary cause, it tends to keep up the habit. The organ becomes contracted, and when the incontinence has persisted for a while, its capacity becomes less and less, and eventually may not exceed two or three ounces.

The frequency of urination establishes a practice which gradually degenerates into a habit; as a natural sequence, the viscus becomes accustomed to contract when only partly filled. The cause of the incontinence having been removed, the bladder gradually regains the power to hold larger and larger amounts, or the organ may be distended by a boric acid solution, etc., larger quantities being employed each time, twice or three times a week.

PROGNOSIS.—In cases of organic disease of the brain or spinal cord and in malformations, unless amenable to surgical means, the prognosis as to cure is poor. In the larger proportion of cases generally occuring in practice, if the cause can be discovered, the prospects of speedy cure are good. Those due to neuroses usually yield to continued treatment. Many otherwise rebellious cases fortunately get well about the period of puberty. In a small number the functional trouble persists beyond this time, and in a number of girls does not disappear until after marriage. The disorder is most frequent between the third and tenth year. The majority of those affected from the age of ten to fourteen years and over belong to the male sex.

TREATMENT.—It is very evident then that the treatment will vary with the nature of the underlying cause or causes. In the majority of cases general rules must guide us in the management, for no one remedy or plan can be depended upon to secure a favorable result under such conditions.

To quote a recent writer, "A very superficial survey of the pathology of enuresis will demonstrate the futility of any one drug in all cases. We can hardly conceive of a single remedy alike applicable to oversensitiveness of the bladder, to weakness of the sphincter, to hyperacidity of the urine and to a riotous nerve system."

The general health demands our first consideration and the nutrition should be improved. Roborant treatment massage, sponging (local and general) and out-door exercise, gymnastics, etc, are advocated. The anæmia must be treated with iron and other tonics, the bowels are to be kept open, the digestive functions regulated and the urine examined for abnormal products (or too large amounts of any one or more of its constituents). A light, easily-digested evening meal, with but little water afterwards, should be insisted upon, no tea, coffee, or alcoholic beverages allowed. The little patient ought to pass urine before retiring and the bowels be encouraged to move at the same time. As such children wet

the bed once or twice during the night at a fairly regular hour, they should be aroused before the accident happens, and made to pass water. Sleeping upon the back, or too much covering should be avoided. Raising the foot of the bed in some cases will present the urine reaching the sensitive trigone and neck of bladder and prevent the nocturnal incontinence.

Strychnia in full doses is indicated as a general tonic; when the sphincter is weak, in rebellious cases the remedy may be employed subcutaneously in the perineum. Ergot has been recommended in irritability of the spinal centres due to congestion. Electricity has been advised and good results are claimed.

Cases of irritable bladder due to masturbation are intractable, the evil practice must be conquered, and the congested and irritable posterior urethra, treated by local application of silver nitrate, etc. Reflex irritation of whatever nature and inflammatory conditions must not be lost sight of, whether situated in the urethra, vagina or rectum, prepuce or glans, bladder or kidneys.

In a great many instances, as no cause can be discovered, the condition must be regarded as a neurosis. Under such circumstances and in the majority of cases where predisposing factors have been removed, belladonna or its alkaloid must be given. Belladonna and strychnia, single or in combination, are tolerated in much larger doses by children in proportion to the age.

A single dose of belladonna or atropine at night gives relief; it should be given to produce the physiological effect, a transient flushing of the face. In case the want of control of the sphincter is due to the "aprosexia" incidental to adenoids, the patency of the naso pharynx must be restored and then only can we expect a cure.

As a routine plan, the following will yield encouraging results in quite a large proportion of cases. Fluids are to be restricted, particularly in the evening; a light early supper, several hours before retiring, is given; the bowels are to be evacuated and water passed before going to bed; one full dose of tr. belladonna at bed time. A tonic of strychnia and iron three times daily for some time on general principles. In addition the patient is to be aroused once or twice during the night to pass urine.

Such patients are not to be punished, scolded or held up to ridicule; on the contrary, harsh measures tend to keep up the annoyance. Patience, kindness, with strict adherence to the measures referred to yield excellent results, if conscientiously persisted in for a time.

In the accompanying table an attempt has been made to classify the causes of incontinence. This, as will be readily conceded, is a difficult task

In many instances several factors are more or less intimately concerned in the etiology. Moreover, in a large number of the cases there is an essential neurotic state or neuroses:

Varieties: Nocturna (common)—Diurna—Continua.
Three factors: Condition of sphincter, (*b*) bladder, (*c*) innervation.

(1) Malformations { Small meatus, small bladder (natural or acquired).
Hypospadia (perineal).
Exstrophy of bladder. Epispadia.

(2) ORGANIC DISEASE OF NERVOUS SYSTEM		Idiocy, cerebral palsy, meningitis, ch. hydrocephalus, myelitis, injuries of cord, and Pott's disease, with compression or inflammation of cord.
(3) FUNCTIONAL (?) DISORDERS		Epilepsy, chorea, diabetes (mellitus and inspidus). Hysteria, neurasthenia, anæmia resulting in poor innervation and muscular development.
(4) WEAK SPHINCTER		*a*. Infantile condition persisting. *b*. General muscular incompetency, or *c*. Result of exhausting diseases, lowered vitality, general anæmia. Neurotic state.
(5) IRRITABILITY OF BLADDER	*a* Inflammatory processes	Urethritis, balano-postitis, vulvo-vaginitis, cystitis, nephritis, pyelitis, rectal catarrh, ch. inflam. of prostatic portion and neck of bladder due to masturbation.
	b. Local	Stone, polypoid excrescences at neck of bladder, hyper-acid urine, excess of urates, oxalate uric acid, concentrated urine, excess of phosphates due to digestive disturbances and imperfect assimilation. Bacteriuria.
	c. External (Reflex)	Periurethral and perivesical inflam. Phimosis, preputial adhesions and balano-postitis, urethral inflam., vaginal catarrh, rectal catarrh, irritation due to pin-worms, constipation, hardened feces in rectum, fissure, and polypoid of rectum.
	d. Distended Bladder	Excessive secretion of the urine due to large amounts of fluids ingested ; diuresis due to drugs, alcohol, tea, coffee, etc.
(6) DEFICIENT INNERVATION	Emotional	Mental excitement—eager play. Fear of darkness or cold room. Wilfulness. Bad habits.
	Auto-suggestion	The child having wet the bed, and having been scolded or punished, the habit continues through fear. Dreams.
	Undue excitability of sphincter	Neurotic state. Masturbation. Sleeping on back.
	Enfeeblement of will	Anæmia, hysteria, neurasthenia. Lymphotism (adenoids).

THE PATHOLOGY AND TREATMENT OF APPENDICITIS.

Although the subject of the pathology and treatment of appendicitis has been under discussion for many years past we are still far from a complete knowledge of this curious lesion. It is now recognised on all hands that appendicitis is always of infective origin, and this observation applies as well to a mild form, such as mere appendicular colic, as to the graver forms associated with perforation, gangrene, and peritonitis. This is a very important point, because it establishes once and for all the pathological identity of all forms of the disease, and it explains why it is impossible to forecast in a given case the ultimate result. As was clearly pointed out in the course of the discussion on the subject which took place last week at the Medical Society of London, the so-called catarrhal

appendicitis of to-day may be the fulminating appendicitis of to-morrow, in fact, as physicians know but too well, the difficulty of distinguishing *ab initio* between mild and serious cases is more or less insurmountable. Physicians and surgeons still differ greatly in opinion as to the necessity for operation, and as to the precise moment at which such operation is best undertaken, but order is gradually being evolved out of chaos, and this difference of opinion now only obtains in regard to first attacks. There is a general consensus of opinion as to the desirability of operating in the chronic recurrent cases, and in the cases with severe initial onset. Although no hard and fast rule can be laid down for the guidance of physicians in determining the necessity for surgical intervention it is beginning to be recognised that grave responsibility is incurred by the practitioner, called to a case in the early stage, that is to say, at a stage when it is impossible to draw a sound conclusion as to its probable course, who refuses to advise operation. Great stress was laid on rapidity of the pulse as an indication for surgical intervention and this symptom is unquestionably far more significant than the temperature. Another interesting point is that the absence of swelling or tumour over the region of the appendix is not *per se* a contra-indication for operation; indeed, such cases not unfrequently prove to be of the graver kind. The presence or absence of this sign depends upon the anatomical position of the appendix, and this, as is well known, varies very greatly. A sudden onset, with a rapid pulse and tenderness over the appendix, with or without the formation of a tumour, suggests the desirability of operation. A more gradual onset, with a steady pulse and early formation of a tumour, justifies delay, though this must be qualified by the absolute necessity of watching the patient closely taking the pulse rate every hour or two, the better to appreciate any sudden change in the condition. Surgeons in general are agreed in discountenancing the administration of opium and no doubt its routine employment in large doses serves only to mask the symptoms and to induce a sence of security not justified by the condition of the patient. Nevertheless, this drug is capable of rendering great service if administered with one or two provisoes. First of all no opium should be given until the practitioner has made up his mind as to the sort of case he is dealing with, especially in view of the necessity for operation. Even then it should not be given continuously or in doses which would determine a condition of narcosis. Subject to these conditions opium calms the restless irritability of the patient, and while contributing to the relief of his suffering it does not hinder diagnosis nor prejudice an operation should this subsequently be decided upon. The fact that a very large proportion of the cases which are described as ending in recovery, relapse after a variable interval and are ultimately operated upon, renders it incumbent upon us to accept the term "recovery" with some reserve. One precaution imposes itself, viz., that a patient whose symptoms, after a first or second attack, have subsided, ought to be kept under observation in order to determine by periodical inspection whether the lesion has completely cleared up. In many cases it will be found that some induration or tenderness over the region of the appendix persists even after apparent recovery, and such a patient must be regarded as the

possessor of an explosive focus which may at any moment place his life in jeopardy. The statistics of the so-called recoveries are still incomplete, but if it can be shown that sooner or later the majority recur a strong case will have been made out for operative treatment as a routine measure in dealing with this affection.—*Medical Press and Circular.*

MARK TWAIN ON CHRISTIAN SCIENCE.

This last summer, when I was on my way back to Vienna from the Appetite-Cure in the mountains, I fell over a cliff in the twilight and broke some arms, and legs, and one thing or another, and by good luck was found by some peasants who had lost an ass, and they carried me to the nearest habitation, which was one of those large, low, thatch-roofed farm-houses, with apartments in the garret for the family, and a cunning little porch under the deep gable decorated with boxes of bright-colored flowers and cats; on the ground floor a large and light sitting-room, separated from the milch-cattle apartment by a partition; and in the front yard rose stately and fine the wealth and pride of the house, the manure-pile.

There was a village a mile away, and a horse doctor lived there, but there was no surgeon. It seemed a bad outlook; mine was distinctly a surgery case. Then it was remembered that a lady from Boston was summering in that village, and she was a Christian Science doctor, and could cure anything. So she was sent for. It was night by this time and she could not conveniently come, but sent word that it was no matter, there was no hurry; she would give me "absent treatment" now, and come in the morning; meantime she begged me to make myself tranquil and comfortable, and remember that there was nothing the matter with me. . . .

It was a night of anguish, of course—at least, I supposed it was, for it had all the symptoms of it—but it passed at last, and the Christian Scientist came and I was glad. She was middle-aged, and large and bony, and erect, and had an austere face, a resolute jaw and a Roman beak, and was a widow in the third degree and her name was Fuller. I was eager to get to business and find relief, but she was distressingly deliberate. She unpinned and unhooked, and uncoupled her upholsteries one by one, abolished the wrinkles with a flirt of her hand, and hung the articles up; peeled off her gloves and disposed of them, got a book out of her hand-bag, then drew a chair to the bed-side, descended into it without hurry, and I hung out my tongue. She said, with pain, but without passion:

"Return it to its receptacle. We deal with the mind only, not with its dumb servants."

I could not offer my pulse, because the connection was broken; but she detected the apology before I could word it, and indicated by a negative tilt of her head that the pulse was another dumb servant that she had no use for. Then I thought I would tell her my symptoms and how I felt, so that she would understand the case; but that was another in-

consequence. She did not need to know those things; moreover, my remark about how I felt was an abuse of language a misapplication of terms—

"One does not *feel*," she explained; "there is no such thing as feeling; therefore, to speak of a non-existent thing as existing is a contradiction. Matter has no existence; nothing exists but mind; the mind cannot feel pain, it can only imagine it."

"I am full of imaginary tortures," I said, "but I do not think I could be any more uncomfortable if they were real ones. What must I do to get rid of them?"

"There is no occasion to get rid of them, since they do not exist. They are illusions propagated by matter, and matter has no existence; there is no such thing as matter." . . . In her compassion she almost smiled She would have smiled if there were any such thing as a smile.

"It is quite simple," she said; "the fundamental principles of Christian Science explain it, and they are summarized in the four following self-evident propositions: 1. God is All in all. 2. God is good. God is mind. 3. God, Spirit, being all, nothing is matter. 4. Life, God, omnipotent Good, deny death, evil, sin, disease. There—now you see."

It seemed nebulous; it did not seem to say anything about the difficulty in hand—how non-existent matter can propagate illusions. I said with some hesitancy:

"Does—does it explain?"

"*Doesn't* it? Even if read backward it will do it."

With a budding hope, I asked her to do it backward.

"Very well. Disease sin evil death deny Good omnipotent God life matter is nothing all being Spirit God mind is God good is God all in All is God. There—do you understand now?"

It—it—well, it is plainer than it was before; still?"

"Well?"

"Could you try it some more ways?"

"As many as you like: it always means the same. Interchanged in any way you please it cannot be made to mean anything different from what it means when you put it in any other way. Because it is perfect. You can jumble it all up and it makes no difference; it always comes out the way it was before. It was a marvellous mind that produced it. As a mental *tour de force* it is without a mate; it defies alike the simple, the concrete and the occult." . . .

Under the powerful influence of the near treatment and the absent treatment together, my bones were gradually retreating inward and disappearing from view. The good work took a brisk start now, and went on quite swiftly. My body was diligently straining and stretching, this way and that, to accommodate the processes of restoration, and every minute or two I heard a dull click inside, and knew that the two ends of a fracture had been successfully joined. This muffled clicking, and gritting, and grinding, and rasping continued during the next three hours, and then stopped—the connections had all been made. All except dislocations: there were only seven of these: hips, shoulders, knees and

neck; so that was soon over; one after another they slipped into their sockets with a sound like pulling a distant cork, and I jumped up as good as new, as to frame-work, and sent for the horse-doctor.

I was obliged to do this because I had a stomachache and a cold in the head, and I was not willing to trust these things any longer in the hands of a woman whom I did not know, and in whose ability to successfully treat mere disease I had lost all confidence. My position was justified by the fact that the cold and the ache had been in her charge from the first, along with the fractures, but had experienced not a shade of relief; and, indeed, the ache was even growing worse and worse, and more and more bitter now, probably on account of the protracted abstention from food and drink. . . .

The Christian Scientist was not able to cure my stomachache and my cold; but the horse doctor did it. This convinces me that Christian Science claims too much. In my opinion it ought to leave disease alone and confine itself to surgery. There it would have everything its own way. The horse-doctor charged me thirty kreutzers, and I paid him; I fact, I doubled it and gave him a shilling. Mrs. Fuller brought in an itemized bill for a crate of broken bones mended in two hundred and thirty-four places—one dollar per fracture.

"Nothing exists but mind?"

"Nothing," she answered. "All else is substanceless, all else is imaginary."

I gave her an imaginary check, and now she is suing me for substantial dollars. It looks inconsistent.—*Mark Twain in October Cosmopolitan.*

Lord Methuen's Health.

The papers have lately been full of ominous rumours as to the health of General Lord Methuen, and much has been said as to his possible supersession by General Macdonald. These disquieting rumours are supported by the result of inquiries that we have made. It appears that, when he was wounded, Lord Methuen's charger reared violently, throwing its rider heavily to the ground. Severe spinal and other injuries are said to have supervened, and to this fact is presumably attributable, at least in part, the present inactivity of the Western Division. Such an accident, coupled with the tremendous anxiety and trouble attendant upon such a disaster, are sufficient in themselves to account for a physical collapse, without seeking for any extraneous cause, or antecedent psychical reason for the most unfortunate disposition of the troops at Magersfontein. However this may be, we earnestly hope that there will be no attempt made to judge our Generals in the field by either expert or amateur strategists comfortably ensconced in their arm chairs at home. Our soldiers are evidently faced by the gravest difficulties both in the topography of the field of operations and in lack of sufficient cavalry and artillery. They may be trusted to do their very best with the materials at their disposal, and deserve the whole-hearted support of their fellow countrymen at home.—*The Medical Times and Hospital Gazette.*

SOCIETY REPORTS.

TORONTO CLINICAL SOCIETY.

Stated meeting, April 4th, 1900.

The president Dr. Bingham occupied the chair.

Fellows present: Aikins, Anderson, Fenton, Hamilton, Badgerow, King, Rudolf, McIlwraith, Small, Trow, Bruce, Cameron, Parsons, Pepler, Dwyer, Orr, Elliott.

Visitors: Spence and Dean of the T. G. H.

Nomination for fellowship: Dr. J. H. McConnell by Drs. Bingham and Elliott.

Nomination of Officers: President, W. H. B. Aikins; Vice-President, Dr. George A. Peters; Corresponding Secretary, Dr. A. A. Small; Recording Secretary, Dr. George Elliott; Treasurer, Dr. W. H. Pepler; Executive Committee, Drs. Hamilton, Parsons, King, Bruce, Rudolf, McIlwraith, Dwyer, Anderson, Badgerow, Fotheringham, Fenton, Silverthorn and Trow, five of these to be elected at the meeting in May.

CANCER OF RECTUM AND PROSTATE.—Dr. E. E King presented a patient a man of 59 years upon whom he had operated for carcinoma of the rectum. Patient had always been healthy. In 1897, two years before seen by the surgeon, he noticed a condition or irritation around the anus, with the passage of slimy material and some blood. Had a severe haemorrhage in August 1899; on the following day he had another severe haemorrhage. Patient came under Dr. King's care Sept. 26th, 1899; and on the 11th of October he excised the tumor presented. The mass extended from the sphincter, which it involved, upwards three and one half inches, involving the whole of the circumference of the bowel, and there were enlarged inguinal glands, an interesting fact, because it is exceedingly rare that these glands are involved. Only five months have elapsed since the operation, and he has gained about 20 lbs. The operation performed was a modified Kraske. An incision was made, over the coccyx which was removed; and the surgeon was thus able to get above the mass, and draw down the gut without opening the peritoneum.

Dr. King reported a second case aged 56 years at the time of operation. Bowel movements had been slimy and contaminated with blood for one and a half years prior to the time of entering the Toronto General Hospital in 1894. Had been operated on then by a confrere, and presumably a portion of the growth excised. This did not unite, and there was an ulcerated condition in December of 1894, when he came under Dr. King's care Suspecting syphilis, he was placed on iodide and watched carefully for a month, the ulcerated surface being cauterized. This treatment proved futile. Colotomy was then performed, the growth excised, and there was recurrence at the edge. In 1895 had third excision of the recurrence done . . Six months another recurrence took place at the junction of the skin and mucous membrane. This was the last recurrence. About June of 1898 it was decided to close up the colotomy. He has gained since that operation about 40 lbs. and has comparatively

good health. He has fair control over his movements and has 15 to 20 minutes notification that the bowels are about to evacuate. He can also retain the ordinary solid movements for ten minutes or so.

The third case reported by Dr. King showed that the family history was entirely free except that the mother had had a tumor in her neck, which was said to have been removed by a plaster, the patient subsequently living until she was seventy-five years of age. In 1895, this patient had a very severe pain over the iliac region and lower part of the spine and left side generally. She went into the General Hospital and operation was performed which was said to be the removal of the growth. It recurred within a year, and when seen by Dr. King, she had very severe cancer of the rectum. In this case the peritoneum was opened and the growth taken away very freely. Recurrence took place and this patient is now dying.

Case No. 4 was practically unique. Patient was 28 years of age. Mother and father living, healthy; brothers and sisters, healthy. Maternal grandfather had a cancer of the lip removed some years before his death by plaster. At seven years of age she was injured by being hit in the hip with a large stone. Severe pain developed in 48 hours, and between that time and the next ten or twelve years, she was in bed and out of bed at intervals of six months, and developed a severe form of hip disease. Photographs of the case were here presented. The abscess formations and the fistulæ closed, until she was taken down with an attack of typhoid fever, when these broke out again, and she came to St. Michaels' Hospital in 1894. At that time she had a large mass involving the left side of the anus, perineum and the labia majora, extending into the buttock, almost as far as the trochanter. Its extent was about seven or eight inches long by six inches wide. It was impossible to pass the finger above the diseased area. The mass was cut through into perfectly healthy tissue and dissected up through the fat and down to the muscles, exposing the greater and lesser notches, opening the peritoneum and removing about two-thirds of the area. The bowel was brought down and stretched and covered about three-fourths of the whole surface. Dr. King did four operations on this patient, and so far as the removal of the cancer is concerned, feels that one is not saying too much when he claims it to be a successful removal of the growth. The patient almost succumbed during the operation as she is suffering from chronic Bright's disease. She has gained 18 to 20 lbs. Dr. King then dealt with the statistics on this subject.

Dr. Bingham stated in discussing the paper that the original Kraske operation was intended for conditions where the mass was high up in the bowel; it was then able to continue the functions of the sphincter. Of course if there was any involvement of the sphincter, it should be removed. He further spoke of twisting of the bowel in these cases to effect a final cure.

BULLET WOUND OF ORBIT.—Dr. H. A. Bruce stated he was unable to present the patient, as he did not care to tax his strength in coming from the hospital. A boy of fifteen years of age had been practising with a 22-calibre revolver at a target. Two shots had been discharg-

ed, when he examined the revolver, holding it in both hands, looking down at the muzzle pointed towards him. That is all he remembers. On regaining consciousness he walked two miles to town to consult a doctor. An unsuccessful attempt having been made to locate the bullet, the lad came to the city. The bullet had passed through the eyelashes of the lower lid near the external canthus. The X-Ray apparatus at the General Hospital was pressed into service, but it was quite impossible to outline clearly the bones of the skull, although the bones of the extremities could be seen clearly. Chloroform was administered, and with a probe through the opening in the lower lid, entering the orbit and passing along the outer wall of the orbit (the bone being quite bare of periosteum) the bullet was located about one and a half inches in and could be easily moved by the probe. The external opening was slightly increased. With a pair of artery forceps, the bullet was gotten hold of easily and extracted. It was lying just behind the eyeball about the middle of the orbit, probably against the eptic nerve. It had grazed the orbital surface of the malar bone and the orbital surface of the greater wing of the sphenoid. There are one or two points of interest as regards the symptoms. The boy could move his eyes except downwards when he had pain. The inferior rectus was pressed upon during contraction and caused the pain He could see to right of the middle line but could not see to the left of the middle line. The bullet having been removed, it does not now cause him pain to look down. The bullet was considerably deformed.

Dr. Fenton spoke of a similar case of bullet wound, shot from a small calibred rifle at short range. This bullet entered the nose, there being no external wound, passed through the lachrymal bone, entered the orbit, through the great wing of the sphenoid, then through the tempero-sphenoidal lobe, finally lodging in the occipital fossa

A Case of Addison's Disease.—Dr. R. J. Dwyer read at considerable length notes of a case of this disease, which presented all the classical features of the disease. It occurred in a a man aged 38 years, born in England, a machinist by trade, but on the sea for a good deal of his life. He was admitted in St. Michael's Hospital, December 22nd, 1899. As regards his family history, she father is living but the mother is dead. She was sick six years with spinal trouble before her death, which suggests tubercular disease. In reference to personal history, he weighed 146 lbs. on admission, but used to weigh 160 lbs. Five years ago he was in Australia; malaria on return to England; in bed 9 weeks. Was always subject to headaches. Drank heavily for several years; also smoked. Present illness began with nausea and vomiting in the morning. He would feel better during the day. Headache principally in the morning, which would disappear when out in the open air. Breathlessness and fluttering of the heart appeared. Shortly after Christmas, 1898, his wife first noticed any change in color. Skin became dark principally the face and hands. This contrasted with the body which was quite white. He continued at his work until June when he had to give up on account of weakness which increased. After he discontinued work was able to go about for two months before coming into the hospital in December.

Sometimes he would have attacks of diarrhoea alternating with constipation. He was very languid and drowsy during the day and restless at night. Temperature sub-normal. Pulse varied from 72 to 100. The yellowish-brown color was very marked on the neck. The conjunctivæ presented marked contrast being comparatively pale. The discoloration was mostly marked on the face, back of the neck, perineal sulcus, scrotum and penis, which was quite black. The mouth presented an interesting condition. The presence of very black pigmentation on the inner surface of the gum, and also and still more striking on the under surface of the tongue, was an interesting feature. The whole under surface of the tongue was absolutely black. Respirations ran at twenty. The patient died on the 29th of December, apparently from syncope. At the post mortem examination, tubercular areas were found in the lungs, liver, and a solitary tubercular ulcer in the small intestine situate about three or four feet from the ileo-caecal valve. There was some enlargement of the spleen. The right supra-renewal capsule was very hard and dense and the appearance of the normal gland was destroyed. It was apparently converted into a hard febrous mass. The left one was increased in size. Sections of each were made and caseous deposits found abundantly.

Dr. Parsons who made the sections stated there was most extensive tuberculosis present.

George Elliott,
Recording Secretary.

TORONTO CLINICAL SOCIETY.

Stated meeting March 7th, 1900.

Fellows present:—Aikins, Peters, Bingham, King, Primrose, Small, Trow, Lehmann, Oldright, Thistle, Fotheringham, Rudolf, Silverthorn, Pepler, Fenton, McCollum, Dwyer, Boyd, Hamilton and Elliott.

Visitors:—Dr. Clarence Starr and Dr. Spence.

Nominations:—Dr. C. B. Shuttleworth and Dr. A. Y. Scott were proposed by Drs. Fenton and Pepler.

Cases Illustrating Operative Procedure in Tuberculosis.

Disease of Knee.—Dr. A. Primrose presented two patients, one a young man of nineteen years and the other a boy of eight, showing different methods, the first one, complete excision and the second a case of erasion. The first patient came under his care in July, 1894. Three years prior thereto, great swelling occurred in the knee joint and patient was treated at that time by rest and the application of a Thomas' splint. Became apparently well under this treatment until February, 1894, when the trouble again appeared. Under somewhat similar treatment he became gradually worse, and at the time he came under Dr. Primrose's

care, there was very advanced disease of the knee joint. At that time the knee was flexed at an angle of 100 degrees, with little or no pain unless on manipulation, when there was a slight amount of pain; there was also marked atrophy in the muscles of the thigh and leg—very pronounced symptoms of extensive tuberculosis of the knee joint. He was treated by rest and the Thomas' splint; improved for a time, but during the next two months improvement did not continue and abscesses formed. He again came under the surgeon's care in February, 1899, and at that time he had sinuses in connection with the knee joint. One sinus existed in the popliteal space and one to the outer side of the joint, both discharging pus, and there was a great deal of thickening about the synovial sac of the joint. The operation was an extensive one. In the first place the surgeon concluded that the best thing to do, was where one found the joint stiff, to attempt with a certain degree of force to break down the ankylosis; because ankylosis which occurs during the course of the disease of the knee is usually not firm and readily yields. This was done above and below the joint. The surgeon here exhibited the specimen of bone removed, which consisted of the lower end of femur and upper end of tibia, each about an inch in length and the posterior part of the patella. When broken down it fractured obliquely, exhibiting a carious cavity showing tuberculosis material. The operation was commenced with a U-shaped incision, the large flap being turned up, the joint exposed and the mass of diseased bone removed. Excavations were scooped out in both tibia and femur until healthy bone was reached. Then the operation was concluded by dissecting away all the tuberculosis tissue about the joint. The was considerable bleeding after the operation, and the general condition of the patient was anything but satisfactory. The anterior wound healed up well. In order to secure union and osseous ankylosis, wiring was performed on one side alone, because of the lowness of the patient under the anesthetic. There is just the amount of flexion one would wish to have in these cases. There is firm ankylosis so that he can put the foot firmly upon the ground. In December last, he had a sinus in the popliteal space and the surgeon determined to enlarge it. A small cavity in the bone was found which was curette. The anitomical relations were fairly confused of course, the external popliteal nerve being somewhere near. The sinus was stretched forcibly and the nerve was implicated and an extreme neuritis was set up, with great pain on touching the sinus, and complete paralysis of parts supplied by this nerve. Subsequently this returned. He had re-action for faradic electricity. Whilst at first it took thirty-five milleampieres to cause any contraction, the muscles now re-act to less than twelve, and from Dr. Dickson's experience that gradually decreases in the strength of the stimulus. This necessarily gives an extremely favorable prognosis, and in all probability he will recovor in time most of the functions of the external popliteal nerve. When he stands up you can see how firmly he can come down upon the foot; he has firm bony ankylosis; and the case illustrates how much can be accomplished in tuberculosis trouble in the knee joint: he will have a good useful limb. Sensation has returned but he cannot extend the toes.

The second case exhibited was that of a boy about eight years of age, and was one of those cases where there is tubercolosis of the synovial membrane, and apparently confined to the membrane; no disease in the joint itself. This had become progressively worse, and he had been under treatment for considerable time,—rest extension &c., but did not improve. In May, 1898 the surgeon performed the operation of erasion, as described by Mr. Cheyne, viz.,—an H-incision—two vertical, an outer and an inner incision and a cross incision. The patella was sawn across and two flaps turned up and down, thus exposing the whole of the joint without any difficulty. The synovial membrane was pulpy and very much thickened, to the extent that it was impossible to make a clean dissection of the anterior part of it. The specimen was shown to the Fellows. The lateral ligaments were examined and tuberculous disease found there and the greater part of the crucial ligaments were also destroyed. The joint was thoroughly cleaned out, as regards the tuberculosis disease, Then the wound was stitched up and plaster of paris splints put on. The first dressing was done six weeks after, the splints removed and the stitches taken out; the wound had healed by first intention. It was kept in plaster for considerable time, and now the boy is going about having a good use of the joint. Dr. Primrose had expected ankylosis, but the boy has a good degree of movement. He can walk wonderfully well which is an interesting feature in the case. The limb on the affected side is half an inch longer than that on the sound side. This the surgeon thought to be due to irritation at the line of the epiphysis, causing increased growth not going on to disease or destruction. This is an extremely interesting point in the case. Speaking again on the first case, Dr. Primrose stated there never were any reactions to galvanic electricity. It reacted to faradic electricity readily.

DISCUSSION.

Dr. Bingham thought that Dr. Primrose ought to be congratulated on both results. In the first case he would have been tempted to perform an amputation at once. The fact of having secured such an excellent result by incision should be encouraging. He had come across more than once lengthening in these cases and thought the version given by Dr. Primrose the correct one.

Dr. Clarence Starr stated he had followed the case from the beginning, speaking of the latter one, and his angle of extension is now 165 degrees. It is a question whether that is not increasing until it goes on and gets in the neighborhood of a right angle. He should be watched carefully to see if such occur, and if so he should be put on an apparatus to get the angle extended again. Excision in a child of that age is not to be desired if it can be avoided. He has seen all the way to 11 inches of shortening follow, and in a case like that it would have been better to have performed an amputation. He thought the final result in this case excellent.

Dr. Fotheringham spoke regarding the lengthening of the leg in the second case and said it could be proved from other cases that the length-

ening occured in those in which the diseases occurs in synovial membrane. If it occurred in the bone in the neighborhood of the epiphyseal line, you would inevitiably have shortening.

Dr. W H. B. Aikins asked whether the patient in the first case would not have been better with the leg off. Is it better to have a stiff leg than a good artificial one.

Dr. Rudolf asked in regard to the electrical reaction in the first case did the galvanic current cause no contractions.

Dr. Primrose: It will react to galvanic, but did not cease to react to Faradic electricity. If the nerves are paralyzed, it reacts to galvanic, whilst if the nerves are present, it will react both to Faradic and galvanic.

Dr. Primrose, in reply: With regard to Dr. Aikins' question, he would prefer to have a limb which was attached permanently, than one which would be constantly wearing out and giving trouble through misfit and such like things. A firm, stiff, stable limb—firm ankylosis, he considered better than an artificial limb.

Serious Wound of Skull and Acromion.—Dr. William Oldright presented a boy of twelve years, who had been attacked in September last with a knife, the blade of which was about 13 inches in length, having a handle of five inches in length. He had a triangular piece of bone cut in the vertex about $1\frac{1}{2} \times 1\frac{3}{4} \times 1\frac{3}{4}$ inches and a number of other cuts, nine in all, mostly in the occipital region. There was also a large wound through the acromion process. The strength of the shoulder joint is not impaired in any way.

Appendiceal Abscess.—Dr. Oldright also exhibited this specimen removed after 11 successive attacks of pain and colic.

Symposium on Hysteria.—Dr. J. T. Fotheringham read notes of a case of hysteria occurring in a young woman of 18 years. The family history is insignificant. The eldest child of the family is living—an imbecile—aged 23 or 24 years. The others died young of tuberculous meningitis. Two months before the attack of hysteria, the patient had suffered from rheumatism with swelling in front of the ankle, then in the other ankle, and then in other parts of the body and also in the shoulder joints. Her present condition appears to have developed gradually. As regards the respiratory system, the breathing was occasionally stertorous on inspiration. Dr. Fotheringham asked the Fellows in regard to the type of respiration in these cases. Circulatory system, normal, as was also the genito-urinary system. As regards the nervous system, ankle clonus was especially marked in the right leg, an unusual symptom, because it is not usually seen in hysterical cases. Peculiar postures were adopted while in bed; and all speech was conducted in whispers, jerky in character as if sometimes at a loss for a word. As regards the special senses, she apparently suffered from severe photophobia. When the windows were darkened, she would be noticed watching from under the bedcovering. Hearing was abnormally acute. The treatment consisted in

removal from home to a private hospital; hyoscine, and valerinates of iron, quinine and zinc; plenty of good food. She has been well for some months and now works in a shop. Points noticed in this case: the absence of the hysterical fit; no serious moral perversion; and third, no delusions.

Dr. W. H. Pepler reads notes of a case of what he considered to be hystero-catalepsy in a child five years old. There was nothing especially interesting in the family history, except that the father appeared to be decidedly neurotic. The child was a full-term child; walked at 10 months; talked at 9 months. An attack of measles noticed at two years of age, no complications; no sequelæ. Never suffered from indigestion nor constipation to any extent. About a year ago the child was taken suddenly with an attack of stiffening of the limbs, both arms and legs, and blueness of the face. She is far advanced for her age, intellectually. More like a child of 15 years. Present attack came on about 6.30 p.m. one day immediately after being refused some article at the tea-table. She fell forwards with her head on the table. On the doctor's arrival, she gave the appearance of a healthy child apparently asleep, eyes closed, muscles all relaxed, eye-balls turned up in the natural position of sleep; pupils slightly dilated, but equal, responding slightly to light. The pulse was regular at 80; respiration at 17. The mouth was opened quite easily; tongue clean. There was no urine passed during this condition. On raising the arm it would be kept in that position from 20 to 30 seconds, then it gradually fell. An anema was given and the child ordered to be kept quiet. Two hours afterwards it awoke.

Dr. W. B. Thistle said he had been impressed with the presence of ankle clonus in the case of Dr. Fotheringham, as many authorities seem to think that that is not consistent with the diagnosis. He recited the history of several cases and dwelt on the difficulty of diagnosis.

Dr. Rudolf confined his remarks to prognosis and stated it was necessary to be careful in diagnosis to eliminate the presence of organic disease. He recited several cases illustrating this, which also had a bearing on the prognosis. As regards death intervening, the prognosis was nearly always favorable. Recovery was not so good.

Dr. Dwyer emphasized the importance of eliminating organic disease disease and gave several apt illustrations proving the necessity of employing great care in excluding the organic factor. He was inclined to think also that the reports of a rise of temperature was not substantiated with solid and accurate facts.

Dr. Fotheringham referring to the question of age, hysteria coming on after puberty is not recovered from to the same extent as that occurring before that age. The medicinal treatment was not of much use; the suggestive treatment was the best. Hypnotism especially in children was of no service. He closed the discussion with an allusion to the diagnosis.

GEORGE ELLIOTT, *Recording Secretary.*

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EDITORIAL.

THE PROVINCIAL UNIVERSITY AND MEDICAL EDUCATION.

The peace or state of armed neutrality that has obtained for the past ten years or more in medical teaching circles in Toronto has been broken in upon, and the apple of discord has been cast upon the table once more. This time it is in the shape of a Bill introduced into the local Legislature by Dr. McKay, at the instance of the Corporation of Trinity Medical College, who have felt that their relations with the Provincial University are unsatisfactory. Among those who for some years past have held strongly partisan views, a good deal of bitterness has been developed, if we may judge from interviews and letters appearing in the public press, and a frame of mind displayed which cannot be conducive to a clear and judicial conception of the best interests of medical education in the Province. There is no evidence in the situation, however, that the memory of past feuds or present misconceptions of each other's intentions and desires need cause an impassible chasm between institutions whose interests are really identical. We believe too that on all sides, in both the schools chiefly con-

cerned, there exists a genuine desire for the advancement of medical learning, even though they have not always seen eye to eye as to details. Evolution has been silently at work, and in the past fifteen years conditions have so radically changed, especially by the developments in chemistry, physiology, bacteriology and pathology, that schools which formerly did work as advanced as any of the time find it now difficult from the ordinary sources of revenue to provide the laboratory facilities necessary to maintain their high relative standard. It has thus been found in all parts of the world that subjects pertaining to the science as distinguished from the art of medicine can be most satisfactorily taught only with the facilities offered by large private endowments or by state aid. A review of the condition of affairs in Germany, Britain, the United States, or any part of the world, confirms this position. In addition, the idea of consolidation, unification, combination, is abroad as never before, in the Empire, in commerce, in the church, in education. In fact Toronto University, since the adoption of the principle of federation some years ago has taken a principal share in the education of public opinion in Ontario in this direction.

The latest phase in the evolutionary process above referred to is the federation of Trinity University with Toronto, soon we believe to be accomplished, and from this as an immediate corollary arose the necessity for action on the part of Trinity Medical College. As to what that action might best have been there may be room for a difference of opinion. That Trinity Medical College has vested rights and interests that have suffered as the result of the legislation of 1887, by which the present medical faculty of the university was constituted no reasonable person will be disposed to deny, rights which the government at that time promised should be safeguarded. But we do not believe there is any disposition on the part of either the Senate of Toronto University or the Legislature to deal unjustly or to act unfairly in the matter. So while we admit the righteousness of many points in the position taken by Trinity we do not find ourselves in accord with the diplomacy of the measures proposed to remedy the trouble.

While there is much abstract justice in what is asked, the end sought in the McKay Bill would not, in our opinion, be that most devoutly to be wished, but would be justifiable only after a failure, by fair mutual concessions, to arrive at a more satisfactory settlement. The only possible alternatives that present themselves to overcome the difficulties are three,—either affiliation, effective in spirit as well as in letter, federation or amalgamation.

First, as to affiliation, the quarrel between the correspondents is

mainly meant to prove on the one hand that Trinity Medical College already enjoys affiliation, and on the other to prove that it was nullified by subsequent legislation which erected the old Toronto School of Medicine into the Medical Faculty of the University. The proposed legislation would seem to indicate that in the minds of its promoters the first of these three alternatives was to be preferred. This implies an equalization of the status of the teaching bodies concerned in relation to the Provincial University, which would necessarily mean the disestablishment of the medical faculty of the University. Such action would not in our opinion best subserve the interests of medical education, and would be contrary to accepted views as to the increasing scope of the rights and duties of the state with regard to the public health and all that concerns it. The main thing in favor of affiliation is that it would place all the medical faculties concerned on a footing of equality with reference to the Provincial University—certainly a most just and reasonable contention on the part of Trinity—but can this object not be attained quite as fully and as readily on a basis more in keeping with the best interests of medical education, viz., by a fair amalgamation of the teaching bodies concerned as the medical faculty of the University?

Affiliation could only be, as it has been in the past, a temporary expedient, liable at any time to be thrown out of gear by changing conditions in either of the contracting institutions, and would only tend to perpetuate the rivalries and jealousies that have formed so unfortunate a line of cleavage in the profession in this city and province.

As to federation, it would not seem technically possible for an institution not in possession of degree-conferring powers to resign them, and we believe the relations of Trinity Medical College to Trinity University are not such as to make federation in arts imply federation in medicine.

As to the third alternative, amalgamation, we do not hesitate to say that it is in our own opinion the best solution of the existing difficulty; and more than that, that is the one thing needed to firmly establish the teaching of medicine in Ontario on a permanent and satisfactory basis. There can be little difficulty in the way if the question is approached by both parties to the scheme in the broad and statesmanlike temper displayed by Professor A. H. Wright in the statement of his views recently made in the public press. The institutions concerned would profit by the concentration of energy and the lessening of expense which would follow. The beneficial effects of rivalry with other institutions would still be felt in their relations with colleges outside the city, while the divisions that have lain beneath the surface and spoiled the bloom of the friendship that

should exist, and have existed, in hospitals, medical societies and general practice, would cease.

The undoubted advantages of Toronto as a centre for medical teaching could then be realized to the fullest extent, with an institution supported by a united profession and under the control of, and fostered by, the provincial University. The postgraduate courses for which so many have at present to expatriate themselves would become possible at home.

We look upon the present period as a crisis in educational matters, one of the gravest that has occurred in the province in many years, big with possibilities for either good or evil to the profession, to the public, and to the progress of medicine. It is the duty of all concerned to lay aside self interest, personal animus and partisan views and approach the question in the broadest spirit of conciliation, fairness, goodwill, and mutual respect, looking only to the main point, a permanent settlement of the question of medical education in Toronto and in the Province.

H. B. A., J T. F.

CANADA SHOULD SEND A FIELD HOSPITAL TO SOUTH AFRICA.

At the conclusion of the lecture delivered by Surgeon-Major Nattress before a largely attended meeting of the Canadian Military Institute on March 26th, it was moved by Lieut.-Col. Mason, seconded by Lieut. Col. C. Denison, and unanimously carried that the desirability of immediately equipping and forwarding a Field Hospital for service in South Africa be urged upon the Dominion Government.

This is a somewhat belated move in the right direction, and one which we believe will meet with general approval. Other branches of the Canadian Militia service are represented at the seat of war—infantry, mounted troops and artillery—about three thousand in all, or the number to which, according to the establishment, one Field Hospital should be detailed. Had the proposed re-organization of the medical service of the Canadian Militia been completed before the unfortunate circumstances leading to the departure of Major-Gen. Hutton occurred, it is probable that a Field Hospital would have been sent with the other Canadian contingents; but, in the chaotic condition of the medical department, though all recognized the desirability of action being taken no one took the initiative.

The personnel of a Field Hospital consists of five officers and forty non-commissioned officers and men, and the equipment required is forty tents, with six waggons for transport, etc. The expense of fitting out and

maintaining a Field Hospital would, therefore, be trifling as compared to the outlay made for other branches of the service represented, and we have no fear but that its officers and men would render as valuable and acceptable service to the Empire as their brother Canadians in the combatant ranks.

The experience gained by the officers and men in active service would be of inestimable value to the militia medical service by giving practical training to so many of their number.

The great importance of the medical department in time of war should impress those in authority with the necessity of taking this means of stimulating the public interest in, and increasing the efficiency of a branch of the service that has been sadly neglected, and which, in case of being required for active service we fear would be found entirely unprepared for the duties required of it.

ONTARIO MEDICAL ASSOCIATION.

The next annual meeting of the Ontario Medical Association to be held on June 6th and 7th in the Normal School buildings, Toronto, promises to be one of unusual interest. The acting President, Dr. A. H. Wright, the secretary, Dr. H. C. Parsons and the various committees are working hard to insure the success of the meeting. We are pleased to notice that the subject of Interprovincial Registration is down for discussion at one of the generals sessions. As this is a matter of vital interest to the profession, not only in Ontario, but in the whole Dominion, it is particularly desirable that a full and free interchange of opinion be had in reference to it. As the Ontario Medical Association will be taken to voice the feeling of the doctors in this province regarding the scheme, any pronouncement they may make will have much weight in determining the character and scope of the proposed legislation. The subject will be introduced by Dr. J. A. Williams, of Ingersoll, and Dr. Roddick, of Montreal, and others, who have been actively interested in the proposed formation of a Dominion Council will take part in the discussion.

Dr. Luke Teskey, of Toronto, will open the discussion in surgery, and Dr. Llewellys Barker, of Baltimore, in medicine.

Those who intend to present papers are requested to notify the secretary at an early date.

EDITORIAL NOTES

In *The American Journal of Obstetrics and Gynœcology* Edward D. Davis, Professor of Obstetrics in Jefferson Medical College, furnishes an article this month on the following subject:—"When shall the uterus be douched, and how shall it be done?"

He points out the two dangers liable to follow this practice to be. 1. the danger of sepsis. 2. the danger of hæmorrhage. Yet these two conditions are the very indications for its use. If a uterus be large or flabby or if the patient be nervous, intra-uterine manipulation may cause hæmorrhage. He points out the value of intra uterine douching in post partum hæmorrhage He speaks of the old treatment of washing out all the clots with hot sterile water as best, this to be followed by an intra-uterine tampon of iodoform or sterile gauze. Sepsis is produced by the use generally of non-sterile instruments or hands. He points out the difficulty of obtaining perfect asepsis in obstetric practice. When the septic condition exists he advocates curetting, and douching with sterile water or saline solution, followed by the use of the intra-uterine iodoform tampon.

The danger of hæmorhage and sepsis together in cases of incomplete abortion would indicate as little manipulation as possible.—D. G. G.

Mrs. Mary Baker Eddy, the head of the Christian Science cult, has, it is announced, given her son a cheque for $10,000 and a house, worth $15,000 as a Christmas present.

TRINITY MEDICAL ALUMNI ASSOCIATION.—Theses in competition for the gold medal offered by the above named association should be signed by a pseudonym and forwarded to the secretary, Dr. George Elliott, 129 John St., Toronto, before May 1st, 1900.

ANOTHER GIFT TO MCGILL.—It is stated that Sir Wm. McDonald has made a donation of $200,000 to the mining and chemical departments of McGill University. The splendid munificence and public spirit shown by the millionaires of our sister city in the support of their educational and charitable institutions has forced the admiration of everyone having these interests at heart, and sets an example worthy of the emulation of the wealthy men in our own city.

MEDICAL DINNER.—The Toronto Clinical Society hold their annual dinner on April 18th at the Albany Club. The president, Dr. G. A. Bingham, takes the chair at 8 p.m.

BINIODIDE OF MERCURY.—In Dr. Goldsmith's article in the last number of the LANCET, page 377, owing to a typographical error bisulphide of mercury—1 in 2,000 is recommended in suppurating middle ear. This should read "biniodide of mercury."

VERATRUM VIRIDE.—We are in receipt of a pamphlet from the Lyman Bro's Co'y, Ltd., agents for Canada, written by W. C. Norwood, M.D., of Cokesbury, L. E., to extol the virtues of *veratrum viride*, and of his preparation in particular, Norwood's Tincture as it is called in the United States. Nothing that he says changes our opinion of the virtues of the drug, as we look upon it as one of very great value in the right sort of cases. He claims too much for it, for instance in puerperal convulsions, where it is almost certain to do harm, and in which its use is based on purely symptomatic grounds, and not on intelligent pathology. We are bound to say, too, that his evidence is but little to be relied on if his knowledge of the drug is not better than his knowledge of Holy Scripture, for he speaks of the remedy as standing "like Saul *of Tarsus* a head and shoulders above its fellows."

He is Half Right.

A remarkable editorial in the Interstate Medical Journal reads as follows:—

"Medical men the world over should view with pride the excellent record which is being made by the medical department of the British army in the South African campaign. No matter how much light the future reports of the military state of affairs may be shed on the attitude of the British commanders in this campaign, no matter how much aspersion may be shown by pro-Boer sympathizers for the blundering English in their quagmire of mistakes in the military conduct of matters of vital importance during this South African campaign, a bright effulgence will ever be cast upon the noble work of the medical men concerned in the care of the injured, the sick, and the dying on the field and in the hospitals of South Africa. It is the very same thing over again, just as it was at Majuba Hill: 'tis the medical corps which alone deserves credit. This is true of the present campaign, that the attention given to the sick by their protectors, the medical men, is far better than that given to the well men by their protectors, their commanding officers. This should not be. Look to it, English generals, that your men are not led into death-traps time and again; have a care that the laments of thousands of grief-stricken wives, mothers and daughters shall not ring through Albion for years to come, and see to it that posterity shall not curse your names instead of venerating them, as you would have them do. The whole fabric of the English army shows evidences of decay, with the exception of the intact medical corps, which is doing good work, has always done good work, and will always do good work, handicapped though they may be by the blunders of the other departments."

This critic like so many others in the present war in South Africa has come to grief through having unburdened his prophetic soul too soon. Possibly recent events will tempt him to revise his criticism of British officers and soldiers and so save his reputation as a seer. We would humbly suggest that he then turn his faticidal genius to the military operations in the Philippines and with the nearer and clearer view he might be expected to have of affairs at home re-establish his lost fame. In the meantime we must congratulate him on his appreciation of the Royal Army Medical Corps. His ominous warning to the British, however, is almost sufficient to curdle ones' blood.

A Brilliant Scheme.

For impertinence and brazen effrontery we commend the following scheme for securing patronage for a private hospital in Michigan, an appointment to the "staff" of which was offered to a surgeon in this city. The surgeon was to act as an agent for the hospital to secure patients, and fees were to be divided between him and the hospital.

As a further inducement the hospital authorities offered to write as follows to such persons as the doctor might wish :—

"Dear Sir or Madam,—We beg respectfully to call your personal attention to the fact that we have just recently elected and appointed Dr. ———— of your place to be a Visiting and Consulting Physician and Surgeon on the Medical Staff of our Hospital, on account of his excellent medical qualifications and professional standing. We have no hesitation in recommending him to you, and should you, any member of your family, friends or acquaintances become sick and desire medical treatment, we wish to highly endorse The Doctor and recommend you to patronize him. Should you at any time desire the services of our Hospital for yourself, friends or acquaintances, The Doctor will make arrangements with you so that you can come here for treatment.

We have a first-class, up-to-date surgical Hospital, with every home comfort and a Medical Staff of eminent Physicians and Surgeons, and our charges are less than anywhere else you may go. Trusting that you will bear these facts in mind, believe us to remain."

If the doctor were not sufficiently dishonorable to submit to this, provision was made for his qualms of conscience by the following note appended to the letter :

"The above is a type-written copy of a letter we send out upon our regular business letter-heads (twelve to each certificate-holder) recommending and endorsing those members only *who have paid for their certificates of membership.* Should any member want more than twelve of these letters sent out in their behalf, they must send us postage stamps covering same. Of course, it is optional for each member to say whether

or not they wish any of these letters of endorsement sent out in their behalf, as some will claim it is against the unwritten laws of medical ethics."

In addition to dividing the spoils and giving him such a flattering recommendation, this accommodating corporation grants a lithographed certificate of membership to the doctor 17x22 inches and of such quality as he may wish to pay for—$5, $7.50 or $10.00—the proceeds from which "are devoted to the maintenance of the hospital for the benefit of us all."

PERSONAL.

Dr. D. Campbell Meyers, of Toronto, Superintendent of the Deer Park Hospital for Nervous Diseases, and one of our associate editors, was recently married to Miss Burson, daughter of the late Rev. George Burson, of St. Catharines. Dr. and Mrs. Meyers spent their honeymoon in Atlantic City.

Dr. B. J. Hazelwood, of Pittsburg, Kansas, was married on March 1st to Miss Lulu B. Rehder, of Paris, Ont. Dr. Hazelwood was gold medalist at Trinity Medical College in 1899.

THE LANCET offers its congratulations.

Dr. Llewellys Barker (Tor. '90), who has made an enviable reputation for himself at Johns Hopkins, has been appointed Professor of Anatomy in Chicago University.

Dr. H. E. M. Douglass, of Kingston, Jamaica, a graduate of Queens University in 1897, was mentioned in despatches by Lord Methuen for an act of bravery at the battle of Magersfontein which should entitle him to recommendation for the Victoria Cross. He was surgeon to the Black Watch, and at the famous battle learned that Capt. Gordon, of the Gordon Highlanders, on the advanced firing line, had been badly wounded. He decided to attempt to succor him. He secured a stretcher, and crawling along the ground dragging the stretcher behind him, reached the captain, and dressed his wounds. Several others lying near were also cared for, and the doctor made his way to the rear without injury, but just then a bursting shell fell near him and a piece struck his face, smashing his jaw. The doctor spent some time in a hospital, but is now in England, having been invalided home.

Dr. Jabez Elliott, late of Gravenhurst Sanitarium, who has been in Britain and elsewhere at post graduate work, has gone, under the auspices of the Liverpool School for the Study of Tropical Diseases, to spend six months, with two other medical officers, in one of the most poisonous districts of West Africa in the study of malaria and other such disorders. This is a most important part of Great Britain's work as the great coloniz-

ing power of the world, and the colonies have in Dr. Elliott a most worthy representative in such an expedition.

Dr. J L. Turnbull, formerly of Clinton, has taken up practice in Goderich. Dr. Turnbull has recently returned from Europe, where he had spent about a year and a half doing post graduate work.

We are pleased to learn that Dr. C. H. Brereton of Chesley, a former house surgeon in the Toronto General Hospital, has recovered from his recent severe illness. Dr. Brereton had an attack of appendicitis, requiring operation.

Dr. D. Gibb Wishart has been appointed representative of Trinity Medical College on the Senate of Toronto University.

Dr. Harry Morell (Trin. '92), who has been practising some years at Slayton, Minn., has secured an appointment as assistant surgeon in the American army at Manila.

Dr. Thomas Bradford Richardson, Demonstrator of Anatomy, Trinity Medical College, was married on April 3rd to Miss Anna Coad Butland, of Toronto. The LANCET tenders congratulations.

OBITUARY.

Dr. Richard King, of Peterboro, one of the oldest and most prominent physicians in Eastern Ontario, died on March 27th, after an illness lasting some months. The deceased, who was 58 years of age, was born in Longford, Ireland, and was the son of John King, L.L. D., at one time principal of the Peterborough Grammar School.

Dr. King graduated at McGill College in 1867 and began practice at Baillieboro, Ont., removing to Peterboro in 1879 where he followed the duties of his profession until the time of his death.

His health began to fail about a year ago, when he developed diabetes with later tuberculous infection of the lungs, so that for some months past his condition has been regarded as hopeless.

In the death of Dr. King Peterborough loses one of her best citizens and our profession in this Province one of its brightest ornaments. He possessed the respect, confidence and affection of the community to a degree seldom attained except by the most successful members of our profession. He was held in the highest esteem by his brother physicians so that his early death is deeply deplored by all.

Dr. King leaves a widow, three sons and one daughter. The eldest son Dr. D. C. King graduated at Trinity University last year and practices at Fairgrove, Mich. Another son, Mr. Lionel King, a fourth year student at Trinity Medical College is the popular vice-president of the Ontario Hockey Association.

A sad circumstance in connection with Dr. Kings' death was the death of Mrs. Kings' father, also a physician, on the same day.

The deepest sympathy is felt for the family.

Dr. Alex. N. Barker, of Fenwick, Ont., one of the most successful practitioners in the district, was instantly killed on March 25th. He was returning from Rosedene when his horses ran away and on crossing the railway track the buggy was struck by a C. P. R. express. The deceased, who was 29 years of age, was a native of Scotland and a graduate of Glasgow University. Seven years ago he married Miss Sheldon of Dundas.

We regret to announce the death of Dr. G. E. Coultehard, one of the most prominent practitioners of Frederickton, N. B.

Much sympathy is felt for Dr. H. C. Burritt, of Toronto, in the death of his son, Mr. Alan S. Burritt, at Kimberley, South Africa. Mr. Burritt was serving with the 12th Lancers, and in his last letter dated Jan. 27th was quite well. He was an ardent military man and had formerly been for five years In the North West Mounted Police, and later a Lieutenant in the Prince of Wales Dragoons of Peterboro'.

CORRESPONDENCE.

ONTARIO MEDICAL LIBRARY ASSOCIATION.

April, 1900.

Editor "CANADA LANCET":

DEAR SIR,—A short time ago, by request of the Board of Directors of The Ontario Medical Library Association, I mailed a circular letter to a large number of physicians in this city and throughout the Province, asking if they approved of application being made to the Legislature for an annual grant to the Library Association to enable them to "purchase, circulate and preserve the latest medical works." In answer to this letter over 1,000 practitioners have appended their signatures, expressing their approval of the petition. A large number have asked for information in reference to the library, which time will not permit me to give by personal letter. If you will kindly grant me space in your journal, I will endeavor to give the profession as much information upon library matters as possible in a short letter. I hope that those who wrote me will not consider me discourteous for not replying to their individual letters.

In April, 1887, at the regular meeting of the Toronto Medical Society, a committee consisting of the late Dr. Graham, Drs. McPhedran, Powell, O'Reilly and Wishart, was appointed to take steps necessary for the formation of a medical library for the use of the medical profession. This committee, after a great deal of hard work, succeeded in securing the necessary information, and formed a joint stock company, called The Ontario Medical Library Association, and, under this name, were incorporated by the Ontario Legislature under the Act respecting Libraries. The late Dr. J. E. Graham was the first president, and was most untiring in his efforts to promote the success of the library. He was ably supported by Drs. Wishart, Powell, McPhedran, Nevitt, and the late Dr. J. H. Burns, of Toronto, and by Drs. Arnott and Henderson, of London, Drs. Roseburgh and Mullin, of Hamilton. In a short time a large amount of stock was subscribed, and the nucleus of our present library was

formed. The Toronto Medical Society and the Ontario Medical Association at that time, and since that time, have granted such aid as their finances would allow, and the Board of Directors tender their gratitude for the same.

The council of The College of Physicians and Surgeons of Ontario provided the Association with library accommodation at a rental for some years. As the library developed, and its usefulness became recognized, it was considered wise to open its doors to the whole profession in Ontario. At the present time any physician in the Province is privileged and invited to visit the library rooms in the College building, and to use the books there during his stay in the city. The library is no longer simply a reference library, but a circulating library, and any registered practitioner in the Province may have any book or journal upon application and upon payment of express or postage, and returning the book within two weeks.

A number of physicians have asked for copies of the regulations, catalogue of books and conditions of membership. There are no printed regulations, but, from the Minute Book, I will endeavor to give the information in reference to regulations regarding the use of the library by the profession, and explain to them terms upon which they may become members of the Association. There is also no catalogue, for the simple reason that in order to have a complete list of books in the library in catalogue form, a new catalogue must necessarily be issued each year. Funds of the Association would not permit of this. Members of the profession in the city become members of the Association on paying for a minimum stock of $15, in five annual payments, and by paying the annual fee of $2.00 a year. Non-resident physicians may become members on the payment of minimum stock $15, in five annual payments, and the annual fee of $1.00 per year. However, as stated above, non-resident physicians may have any book in the library upon application for the same, without being a member of the Association, upon the payment of express charges or postage, and returning the books within two weeks.

It is far from the intention of the Association to make the library of use only to the members of the profession in the city, but their earnest desire that the profession throughout the Province will avail themselves of the privileges we are enabled to concede to them. We are anxious to disabuse the minds of a great many of the prevailing idea that the Library Association is under control of, or is in any way connected with the Council of the College of Physicians and Surgeons. As stated above, the Library Association is a distinct organization and incorporated by the Ontario Legislature. When a petitioner, non-resident in a city desires a book, we would esteem it a favor if he would make application to the librarian of the Medical Library Association, addressing the same to Medical Council Building. Should we have the book in the library it will be forwarded at once, according to the above regulations.

We regret that some should think they are deprived of privileges which are extended to members of the profession in the city. The facts of the case will be understood when they know that the books are the

property of the stockholders, who have paid stock varying from a minimum of $15 to a maximum of $500 per member. In this way, nearly $15,000 worth of books and journals have been accumulated during the last thirteen years. It is now practically impossible to continue to add new books and journals to the library from the subscriptions of new members, most of those who are able and desirous of subscribing having already done so. With the object in view of keeping the library up to date, and providing the profession with the latest medical literature, we have thought wise to petition the Government of Ontario for an annual grant, which will enable us to make the usefulness of the library more widespread than it has been in the past.

Again, in answer to the charge that we are building up a library for the use of the city practitioner to the exclusion of those in the country, I will simply draw attention to the following notice which is hung up in many conspicuous places in the library rooms:—

"This Library is free to all Non-resident"
"Physicians."
"All City Practitioners are required"
"To pay the Annual Fee."

I think the necessity for approaching the Government in this matter can easily be understood by all. We are all aware of the fact that the average income of the medical practitioner is not large. I am well acquainted with the conditions which obtain in the country. I am safe in saying that the average physician's income in the country is not more than $1,500 a year, with truth it can be said that the average income of the city practitioner is not greater. It is practically impossible under such circumstances for the less fortunate to provide himself with everything new which is published. He does well if he is able to provide himself with the necessary books, much less the journals, a comparatively full but still incomplete list of which would cost not less than $100 a year. It is impossible for those with the largest incomes, even, to properly provide themselves with literature.

We hope that all misunderstanding will be cleared up, and that the profession both in the city and throughout the Province will join hands with members of the Association in endeavoring to place as much medical literature as possible within the reach of all.

I might add that this library, through the kindness of Dr. J. F. W. Ross, the President, in depositing $100 in the Surgeon General Library at Washington, is able to secure any works in that library for any member of this Association. This is well known as the largest medical library in the world.

Every member of the profession in the Province can help us to secure a grant from the Government by explaining the necessity for such to his local representative in the Legislature.

I am, yours sincerely,

H. J. HAMILTON,
Secretary.

329 Church St., Toronto.

BOOK REVIEWS.

A MANUAL OF SURGICAL TREATMENT.

By W. Watson Cheyne, M.B., F.R.C.S., F.R.S., Professor of Surgery in King's College, London; Surgeon to King's College Hospital, etc., and F. F. Burghard, M.D. and M.S. (London) F.R.C.S., Teacher of Practical Surgery in King's College, London; Surgeon to King's College Hospital and the Children's Hospital, Paddington Green, etc. In six parts. Longman, Green & Co., London and Bombay.

Part I of the manual is now before us. It deals with "the treatment of general surgical divisions including inflammation, suffocation, ulceration, gangrene, wounds and their complications, infectious diseases and tumors, the administration of anaesthetics."

The high standing of the authors entitles us to anticipate a work of more than ordinary excellence and as we examine the arrangement and matter of the first volume we are not disappointed.

This is essentially a book for the practitioner. In their preface the authors make clear that their object is to furnish precise data as to the treatment and especially the after treatment of surgical cases." We have assumed that the reader is familiar with the nature and diagnosis of the disease and we only refer to the pathology and symptoms in so far as it is necessary to render intelligible the principles on which the treatment is based, and the various stages of the disease to which each particular method is applicable." The first four chapters deal with inflammation, acute suppurtion, ulceration and gangrene. The classification of ulcers and gangrene appeal to one as being at once comprehensive and simple and special care is devoted to the most modern treatment in all cases.

Chapter V is one of the most interesting and important in the book being a careful treatise on anaesthetics by Dr. Silk. This subject, for some reason omitted in certain recent works on surgery, is exhaustively treated from the preparation of the patient to the choice of anaesthetic; the difficulties and dangers of administration and the after treatment of the patient. The following six chapters treat of the varieties of wounds and their treatment with the affections to which cicatrices are liable. Syphilis is discussed in a chapter of nine pages; in treatment nothing specially new is offered.

Chancroid and tuberculosis are briefly but interestingly dealt with and the book concludes with an excellent chapter of over thirty pages on tumors. Here, as elsewhere the practitioner is pleased to notice the

unusual amount of space devoted to treatment and as a very large and varied surgical experience is drawn upon the methods suggested must command our respect.

The work of the publishers is entirely satisfactory and the size of the volume renders it very convenient from the reader's standpoint.

G. A. B.

THE PRINCIPLES OF TREATMENT AND THEIR APPLICATIONS IN PRACTICAL MEDICINE.

By J. Mitchell Bruce, M.A., M.D., F.R.C.P., Physician and Lecturer on the Principles and Practice of Medicine, Charing Cross Hospital; Consulting Physician to the Hospital for Consumption, Brompton; Examiner in Medicine, University of Cambridge. Adapted to the United States Pharmacopoeia by E. Quin Thornton, M.D., Demonstrator of Therapeutics, Pharmacy, and Materia Medica, Jefferson Medical College, Philadelphia. Lea Brothers & Co., Philadelphia and New York, 1900.

The work is divided into two parts. The first deals with general principles of treatment and contains chapters on the principles of treatment founded on aetiology, on pathology, on the clinical characters of disease, on the clinical course of disease, the proper relation of treatment to disease, means of treatment and the art of treatment. The various subjects are dealt with in a clear, concise and readable style.

The second part of the work contains 23 chapters, illustrating the principles of treatment laid down in part I, exemplified by descriptions of the management of many of the commoner pathological conditions as well as the use of various remedial agents.

The high reputation and wide experience of the author has caused the profession to anticipate with unusual interest the publication of a work by him on the principles of treatment in the hope of having placed before it a scientific though practical guide to the subject. In this expectation a perusal of the book before us will cause no disappointment.

The author strikes the proper note for a scientific treatise by saying that a "knowledge of the causes of disease lies at the foundation of rational treatment" and this idea is kept in view throughout. He shows due appreciation of natural methods of cure by stating as a cardinal conclusion in connection with the first principles of treatment, "that the body as a whole and in each of its constituent parts, possesses and employs, with or without success, certain provisions for dealing with the causes of disease, so as to prevent, arrest or counteract them."

From Dr. Mitchell Bruce we expected something good and we have got it. We know of no work that will give greater pleasure and satis-

faction to the thoughtful practitioner or student whose faith in therapeutics is so often sorely tried owing to the want of a rational explanation for the action of the remedies used. This treatise forms a welcome sequel on scientific treatment to the great advancement made in pathology during the past few years.

H. B. A.

A MANUAL OF PATHOLOGY.

By Joseph Coats, M.D., late Professor of Pathology in the University of Glasgow. Fourth edition revised throughout by Lewis R. Sutherland, M.B., Professor of Pathology in the University of St. Andrews. Longmans, Green & Co., London, New York and Bombay, 1900.

The preface, written by S. W. T. Gairdner, is a fitting tribute to the late Dr. Coats whose patient and conscientious work in scientific observation and research has left a lasting imprint in the minds of those who knew him personally or through his writings.

This edition had the counsel and support of the author almost to the close of his life, and was published under the direction of his chief assistant with the alterations that the advance in the subject has demanded.

Some new illustrations have been introduced and former ones replaced but the general outline of the work remains unchanged. The section on monstrosities has been enlarged and some new illustrations added.

In the introductory remarks to the section on diseases of the blood we find the name myelocyte applied to the ordinary large mononuclear leucocyte with byaline cell body—this is misleading. There is much in this, as in Dr. Coats former volumes, that appeals to one. There seems to be in the writer's mind a constant comparision between healthy and diseased conditions—almost invariably there is some reference to the phyislogical before the pathological is discussed—a good guide to the student.

Certain conditions in pathology are of fundamental importance, they are constantly before us in one form or another, and no organ or tissue may be considered immune. Such are the vascular changes, inflammation, the degeneration and regeneration. The writer takes up these points in a practical and pleasing manner, gives the points of the case clearly, and introduces exp erimental work sufficient to give a reality and support to the theories advanced or the facts laid down. Where opinions differ on a point there is a pleasing absence of bias, and the case is fairly argued.

The writer's personal experience was great and there are few discussions to which he cannot add some useful suggestions arising from the study of his own abundant material.

The diseases of special organs are well classified and abundant reference to literature is given at the end of each section.

Throughout, the explanations are clearly and simply given, the illustrations usually good, the argument convincing, all of which make the work most useful to student and physician alike.

H. C. P.

A POCKET MEDICAL DICTIONARY.

Giving the Pronunciation and Definition of the principal words used in Medicine and the Collaterial Sciences including very complete tables of Clinical Eponymic Terms, of the Arteries, Muscles, Nerves, Bacteria, Bacilli, Micrococci, Spirilla, and Thermometric Scales, and a dose-list of Drugs and their preparations, in both the English and Metric Systems of Weights and Measures. By George M. Gould, A.M., M.D., Author of "The Illustrated Medical Dictionary," "The Student's Medical Dictionary"; Editor of "The Philadelphia Medical Journal"; President, 1893-1894, American Academy of Medicine. Fourth edition revised and enlarged, 30,000 words. P. Blakiston's Son & Co., 1012 Walnut Street, Philadelphia, 1900.

This little pocket dictionary pronounces and defines 30,000 medical words.

It is gotten up in a very attractive form and it would be hard to compress into smaller space such a large store of useful information.

PROGRESSIVE MEDICINE.

Volume iv, Dec. 1899. Edited by H. A. Hare. Lea Bros. & Co., Philadelphia and New York.

This volume is we think fully up to the high level of its predecessors in the series. Particularly full and free from padding is the article by Stockton of Buffalo, on diseases of the digestive tract and allied organs, liver, pancreas and peritoneum. The chapter on recent physiology is useful and interesting, particularly to the general practitioner whose daily virtue, unless he reads at intervals such a work as Progressive Medicine, quite fails to realize how eminently true, particularly of medicine and surgery, is the old saying, "of the making of many books there is no end, and much study is a weariness to the flesh."

J. T. F.

DISEASES OF THE NOSE AND THROAT.

By J. Price Brown, M.B., L.R.C.P.C., Member of the College of Physicians and Surgeons of Ontario; Laryngologist to the Toronto Western Hospital; Laryngologist to the Protestant Orphan's Home; Fellow of the American Laryngological, Rhinological and Otological Society; Member of the British Medical Association, the Pan American Medical Congress, the Canadian Medical Association, the Ontario Medical Association, etc., etc. Illustrated with 159 engravings including six full page colored plates, and nine colored cuts in the text, many of them original. Philadelphia, New York, Chicago, F. A. Davis Company, 1900.

It has been a sincere pleasure to peruse this volume—the first to issue from a Canadian writer in connection with diseases of the nose and throat. Unlike so many of the newer writers on this topic, the author while endeavouring to cover the subject, which few men can do out of their own experience, has given us a record of his own experience and the results of his observations, and therefore has made a distinct contribution to medical science. He is to be commended in that he has avoided padding his volume with long histories of cases, or with long extracts from other writers, and has arrived at and succeeded in making his descriptions of the various diseases brief, and yet comprehensive and perfectly clear. To the student principally this is of great value.

Many of the illustrations are original, and some of them are particularly fine, notably those of Primrose and Bensley. The illustrations of pharyngo mycosis is the most striking that we have seen. The author has brought the book fully up to date and tne chapters on pharyngo mycosis, autoscopy, fibrinous rhinitis are examples of this.

The use of the metric system is a bold but right step. Perhaps it is because of our ancient feud with the French that we find it hard to adopt a system which plainly has so many advantages.

While we have said this much in favor of the volume we must mention at least one error of judgment. It would have been in better taste had Dr. Brown refused to follow the *American* custom in the selection of the titles to be appended to his name and been content to follow his namesake of London fame with a modest three lines. We think too that the index will be found unsatisfactory by many readers.

The F. A. Davis Company are to be congratulated upon the issuance of this the best work thus far published by them upon the nose and throat.

WISHART.

PUBLISHERS' DEPARTMENT.

GLYCERINATED VACCINE VIRUS AND ITS PREPARATION.

BY HENRY WALLACE, M.D.,
Assistant Surgeon St. John's Hospital, Brooklyn, New York.

During the summer of 1898, while acting Major and Surgeon of the Forty-seventy Regiment, New York Infantry, United States Volunteers, application was made to the Surgeon-General of the United States Army for vaccine virus for the protection of the regiment. Within forty-eight hours a supply sufficient to vaccinate the entire command was received from Pocono Biological Laboratory. The virus (glycerinated) was put up in Strenberg bulbs, ten in a package, with an equal number of needles for sacrifying, and heavy orange-wood toothpicks for rubbing the vaccine in.

As a result of such an enormous number of vaccinations a rather large number of sore arms, constitutional disturbances, and a great many men relieved from duty as a consequence were expected.

To our great surprise and relief we had less than half a dozen really sore arms and but very few men laid off from full duty.

The pocks resulting were typical, and the almost complete absence of inflammatory reaction remarkable. To be sure, every man's arm was thoroughly cleansed, the needle flamed, and the sacrification protected with a small sterile gauze pad held in place by a couple of strips of adhesie plaster, after the vaccination. Men who said they had been repeatedly vaccinated without success responded to the glycerinated virus.

As a result of this experience I have used it since in private practice with equal success.

It gave me great pleasure to accept an invitation to visit the laboratories whence the vaccine came.

Dr. Slee's laboratory is located in the Pocono Mountains of Pennsylvania, a beautiful, rough country, reminding of the southeastern part of Arizona.

A site selected is near a picturesque trout stream, which not only supplies water to the plant but also drink for the cattle.

The building is of substantial masonry, the barn close by, with corrals for isolating the waiting animals before and after the process. The main building consists of a stable, operating-room, packing-room, office, bacteriological and photographic laboratories. The building is finished in hardwood and cement floors throughout, being kept at an even temperature by furnace heat. The stables are always kept in the pink of perfection, ventilation throughout being excellent. The operating-room is large and airy, has a cement floor with central drain, and is kept in condition for the cleanest possible work.

To one side is the table, arranged so that the calf is strapped firmly to it while in the standing position, and then tilted so that the animal lies comfortably on its right side, exposing well the abdominal wall and inner thigh regions. The packing-room adjoins, as also the refrigerating-room where the virus is stored. Upstairs we find the photographic and bacteriological laboratories.

For the purpose of making vaccine, heifers three to six months of age are selected and are isolated for observation for at least a week. Young animals are chosen, for the reason that their skin is finer and more delicate, and also because they are much easier to handle.

When an occulation is to be performed the calf is led to the operating-room, strapped to the tilting-table, and in a few moments is ready for the operation. The hair is cut very close over the abdomen and upper femoral regions and is then very carefully shaven and scrubbed with soap and water, leaving the skin looking beautifully pink and soft.

The operator and his assistants don their white duck suits and scrub up. All but the prepared portion of the animal is covered with a clean sheet and towels, and then, with a sterile scarifier, a large number of abrasions are made over the bared area. These scarification are probably an inch to an inch and a half long by an inch wide, and reaching down to the rete Malpighi, just so as not to draw blood. At least one hundred to one hundred and twenty of these are made, the calf apparently not much discommoded

The inoculation of a sterile glycerine virus is made, avoiding the reproduction of extraneous organisms as always occurs where the virus is carried from animal to animal by large points or spades, as they are called. Shortly after the spots are thoroughly impregnated the calf is returned to the stable.

For the next four or five days, or until the vesicles are well formed, the calf is apparently well and, apart from an occasional elevation of temperature (rarely exceeding 1 degree), has a good appetite and acts perfectly well.

By the fourth or fifth day, as stated before, this virus is collected. The calf is brought again to the operating-room and placed upon the table.

The points that surprised me were the appearance of the vesicles; they were formed along the course of all the lines and cross lines of the scarifications, and the total absence of any inflammatory areola. Here and there, between the scarifications, could be seen isolaled and typical umbilicated vesicles. Sometimes the inguinal glands are found enlarged, but there was no pus visible to the naked eye. With a sterile "Volkmann" sharp spoon the vesicular growth is removed from all the scarifications and placed in a sterile jar. This pulp is found to contain streptococci and staphylococci.

The removal of the pupl allows to exude in greater or less quantity, according to the size of the vesicles, serum; "ivory points" are covered with this, allowed to dry and are ready for use.

After all available serum is collected the calf is released from the table and returned to the stable, where she remains for several days; later, the calf is allowed its freedom in a corral and by the end of two weeks is sent home to its owner in prime condition, having spent about four weeks on the vaccine farm.

The further history of the pulp is this: It is weighed, thoroughly triturated wit a certain quantity of glycerin, placed in a sterile culture-tube, sealed and stored in a refrigerator. A culture of this glycerinated

virus on agar in a Petri dish show enormous colonies, as said before, of pus-organisms. At the end of the week the number of these colonies is found to be less, so that by the end of a month the material is found to be sterile, showing the germicidal and preservative action of glycerin.

Here, then, let me call attention to the comparison of virus collected on points and the glycerinated virus, and show why the former should not be used when the latter can be obtained.

In the first place, the quantity of virus obtained on a point is uncertain, and in the second place, it is unavoidably infected with extraneous organisms; further, where point virus is obtained, makers are said to wait until the seventh or eighth day of the vesicular development in order to collect enough serum to make the process pay, when by this time it is well infected by pus-organisms.

At the end of the month the glycerinated virus is sealed in tubes or Sternberg bulbs for the market.

Although the Health Board of New York City antedates Dr. Slee by several months in the production of glycerinated pulp virus, still it is to him that the credit belongs of preparing it in quantities large enough for commercial uses.

The United States Army, which has been using the preparation during the present war, is supplied now only with virus in tubes or bulbs, the medical authorities realizing the superior value of a glycerinated virus.

This paper is presented to the profession, feeling that might interest such as were not acquainted with the modern production of vaccine virus.

NAUSEA OF ANESTHESIA.

Nausea and vomiting following anesthetics is sometimes a distressing as well as dangerous condition, and it behooves us to avoid it as far as possible, not only for the comfort of the patient, but for the reason that in serious surgical inteferences it may place life in peril.

Says the *Therapeutic Gazette*:—"Blumfield, in the London *Lancet* of September 23, 1899, observes that some of the chief points to be attended to in the avoidance of after-sickness are: 1. Use as little of the anesthetic as possible consistent with perfect anesthesia. 2. Wash out the stomach at the close of the operation when much mucus has been swallowed. 3. In long operations, substitute chloroform for ether after three-quarters of an hour. 4. Move the patient about as little as possible during and after operation. 5. Place him on his right side in bed, with the head only slightly raised. 6. Give nothing but hot, thin liquids in small quantity for at least eight hours after. 7. Do not alter the temperature of the room for some hours. With proper attention to these points, one-third of the patients operated on will be free from after-sickness, and for short operations the proportion will be much higher still. In fact, after all, in administrations up to twenty minutes, or not much longer, sickness will be found to be the exception."

I have for some time given Ingluvin in liberal doses (10 to 20 grains) just prior to the anesthetic, and have been favorably impressed with its

use, and would suggest its thorough trial by the profession.

Dr. E. H. Gingrich, 511 Cumberland street, Lebanon, Pa., especially recommends Ingluvin for the vomiting so frequently experienced by patients coming out of anesthesia.

Prof. Hobart Amory Hare, in *Practical Therapeutics*, writes:—

1. "That chloroform or ether vomiting is probably centric."

2 "Upon the mucous membranes, ether as a liquid or in a vapor acts as an irritant, and causes, when its vapor is first inhaled, great irritation of the fauces and respiratory tract."

Ingluvin is valuable on account of its mildly depressing the sensitive nerves of the stomach, thus lessening the irritation of that organ. The vomiting centres are subdued, with the result that vomiting is controlled.

For vomiting succeeding anesthesia, Ingluvin should be given 20 grains one hour before the administration of ether or chloroform, and immediately after coming out of the anesthesia, one 20-grain powder; to be followed every hour by 5-grain powders, until vomiting ceases. Usually the 20-grain powder will be found effective. Ingluvin is a bland powder prepared from the gizzard of the chicken, and contains nothing which might contraindicate its use in surgical operations as specified above.

It has long been used as a remedy to allay persistent vomiting of gestation with eminent success by many practitioners throughout the world. It therefore is not a new preparation, but simply an old remedy in a new capacity. Some months ago a professional suggestion was made to use it for the nausea of ether. Subsequent tests and their results have warranted its recommendation to the medical profession. Samples will be sent to any physician who wishes to test it in vomiting of anesthesia. Write W. R. Warner & Co., Philadelphia, for a sample.—*From Monthly Retrospect of Medicine and Pharmacy.*

Spring Coughs

Dr. George Brown, eye, ear, nose and throat specialist, of Atlanta, Ga., one of the most widely known specialists and skillful operators in the south, in a timely article in Moody's Magazine of Medicine, said: "Nothing is more annoying to a patient then a perpetual tickling cough. Whether the immediate cause be marked or mild, if allowed to continue the results are almost sure to be more or less serious. The paroxysms initiate untoward reflex impressions, augment the local disturbances; and by interfering with the patient's rest depress the vis vitae, making the sufferer readily susceptible to the inroads of other attacks.

As practitioners are aware, tickling coughs are particularly numerous and stubborn during the spring and fall. It is well therefore at such times to prescribe that which will be sure to relieve without unpleasant after-effects. In nine cases out of ten antikamnia and codeine tablets will be found almost a specific. The well-known analgesic properties of antikamnia act excellently and synergetically with the physiological effects of codeine which has a marked salutary selective influence on the pneumogastric nerve, making this combination one of the most valuable in medicine."

SYP. HYPOPHOS. CO., FELLOWS

CONTAINS

The Essential Elements of the Animal Organization—Potash and Lime ;

The Oxidizing Elements—Iron and Manganese ;

The Tonics—Quinine and Strychnine ;

And the Vitalizing Constituent—Phosphorus ; the whole combined in the form of a Syrup, with a slight **alkaline reaction.**

It differs in its effects from all Analogous Preparations: and it possesses the important properties of being pleasant to the taste, easily borne by the stomach, and harmless under prolonged use.

It has gained a Wide Reputation, particularly in the treatment of Pulmonary Tuberculosis, Chronic Bronchitis, and other affections of the respiratory organs. It has also been employed with much success in various nervous and debilitating diseases.

Its Curative Power is largely attributable to its stimulant, tonic and nutritive properties, by means of which the energy of the system is recruited.

Its Action is Prompt: It stimulates the appetite and the digestion ; it promotes assimilation, and it enters directly into the circulation with the food products.

The prescribed dose produces a feeling of buoyancy and removes depression and melancholy ; *hence the preparation is of great value in the treatment of nervous and mental affections.* From the fact, also, that it exerts a double tonic influence, and induces a healthy flow of secretions, its use is indicated in a wide range of diseases.

When prescribing the Syrup please write, "Syr. Hypophos. FELLOWS" As a further precaution it is advisable to order in original bottles.

FOR SALE BY ALL DRUGGISTS.

DAVIS & LAWRENCE CO., LIMITED

WHOLESALE AGENTS MONTREAL

NOTICE.

The residence in the town of Galt, at one time owned by Dr. Sylvester, now of Toronto, is for sale. The town is one of the best in the Dominion and is surrounded by a wealthy farming community. The residence was specially built for a physician, has all modern conveniences, heated with hot water system and will be sold on the most favorable terms. This is a good opportunity for a good physician as the town is not crowded as many towns are with physicians. Address, J. Melross, Galt.

J. J. GRANT, M.D., Monticello, Fla., says: I find nothing in the materia medica to equal ALETRIS CORDIAL in uterine diseases. I have used it in a very obstinate case, which outstood several important remedies. When I put the patient on ALETRIS CORDIAL every diseased symptom disappeared in a week's trial. I have used it in several cases, and can, therefore, say that it is an active and powerful agent for diseases of the womb.

Glyzine.

We take pleasure in again calling the attention of our readers to the page announcement of The Glyzine Manufacturing Company of Toronto and New York, appearing in this issue. Last month we took the opportunity of referring to this preparation at some length, and we feel that what we stated was but deserved. As a vehicle for administration of otherwise nauseating drugs, and as a means of covering up the taste of such preparations as quinine, chloral hydrate, bromide salts, ammonia chlor. and carbonate, etc., we are sure that the profession will find Glyzine to be thoroughly efficient. It is also an excellent coloring, sweetening or flavoring agent in any mixture, and is misible wth any liquid, (oils and acids excepted).

The Glyzine Company, Church street, Toronto, express their desire to send a sample bottle free to any physician on receipt of card and we are sure that our readers will take advantage of their offer and become thoroughly acquainted with Glyzine. We know the preparation has only to be known to be appreciated.

"Ferrol" is receiving much increased favor from the medical practitioners in general and the public institutions almost without exception are extensively adopting it, and the clinical results as is reported are greatly beyond what was expected "Ferrol' has the support of about 98 per cent of the medical practitioners of Ontario, and approaching similar favor throughout the rest of the Dominion

Medical Sanatariums all using and praising it.

Physicians regard the selection of ingredients of "Ferrol" as perfect and leaving nothing to be desired.

Physicians that have had "Ferrol" under a powerful microscopic view pronounce it the finest Emulsion they have ever seen, and the taste extremely agreeable and that very delicate stomachs meet with no difficulty in disposing of full doses

In the report of the Congress on treatment of Tuberculosis held in Germany during the past year. A combination of iron and codliver oil, such as Ferrol, contains with fresh air give the best results.

THE CANADA LANCET

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ORIGINAL ARTICLES.

SICK AND WOUNDED IN WAR AND HOW THEY ARE CARED FOR.

BY SURGEON MAJOR WILLIAM NATTRESS, M. D.; M. R. C. S., Eng.,

Medical Officer, Stanley Barracks, Toronto.*

Like all other departments or branches of the army, the medical service as it exists to day, in England, is the outcome of a gradual process of evolution. "It costs more to cure a soldier than to levy a recruit." This quotation expresses the sentiment of the 15th and early part of the 16th centuries. Officers and soldiers of adventure with means could usually secure help, but the poorer soldiers when severely wounded were given a small gratuity and left to find their way home as best they might.

At the close of the last century there really existed no special arrangement for the removal of the wounded. On the battle fields of earlier days thousands of lives were lost for want of help. During the campaigns of Marlborough it was generally considered effeminate to be ill. From even such crude notions progress was slow, not from lack of enthusiasm, of courage or of skill on the part of the Army surgeon, but rather owing to the fact that little attention was given for a long time by the authorities to rescuing and succoring the sick or those wounded in battle. And again, the one great object naturally of the commander-in-chief then as now, was to overcome the enemy, and to accomplish this every available man must be kept on the fighting strength and no one allowed to go to the aid of his luckless mate. When a man fell wounded, if the troops were actively engaged, he remained unheeded on the ground until the fighting was over. Apropos of this apparently cold blooded action on the part of Commanders-in-chief, it might be mentioned that when one fell wounded there was a tendency for two or three or more to fall back to help him. Naturally such unsteadiness

*Read before the Canadian Military Institute, Toronto, March 20th, 1900.

was quite inconsistent with a proper support of the fighting line and could not be tolerated, hence with the advancement of more humanitarian views it became evident that some special arrangement for the care of the wounded was necessary in order both to save life andto improve the *morale* of the men when in action. To-day an English army in the field has every facility for the removal of the wounded and their after care and treatment, by a separate and distinct branch of the service called the Royal Army Medical Corps. To trace the successive improvements that have been made in the organization and equipment of this corps is not the object of this paper.

I propose giving you somewhat in detail the organization as it exists to-day and showing you how complete and perfect are now the arrangements for looking after the sick and wounded and how much more thoroughly the work is done than formerly, not only in the prompt attention to the wounded on the field and their hasty removal from the scene of conflict but also as to the surgical care of wounds and the sanitary supervision exercised at ports of entrance of the forces and on the tented field. By referring to the diagram before you, you will see at a glance the constitution of an army corps and its medical equipment. An English army corps comprises from 40,000 men upwards. It consists of three divisions of infantry with divisional details and a cavalry division. In addition to these, there are at the command of the General Officer Commanding. the "corps troops," which comprise a representation of each branch of the service.

A division consists of two brigades of infantry, the brigades being each composed of four battalions, which have 1,000 bayonets, i. e., eight companies of 125 men each. In rear of these are the divisional details consisting of three batteries of field artillery; one company of Royal engineers; one ammunition column, and one squadron of cavalry. There are three companies of the army service corps, one with each brigade and one with the divisional details, also a bearer company and a field hospital with each brigade and a reserve field hospital on the Divisional Staff.

The cavalry division consists of two brigades of three regiments, each regiment being composed of 666 sabres and is further divided into four squadrons. The divisional details with a cavalry division consist of:—one battalion of mounted infantry, two batteries of royal horse artillery, one ammunition column, and three companies of the army service corps—one with each brigade and one with the divisional details together with two bearer companies and three field hospitals, one of the latter being with the Divisional Staff.

The "corps troops" consist of:—one regiment of cavalry, one batallion of infantry, one ammunition column, two batteries of royal horse artillery, three batteries of field artillery and two companies of royal engineers (one being a pontoon and railway troop and the other a balloon and telegraph corps). With the corps troops there are also three companies of the army service corps, two of which are bakery companies, and one reserve field hospital.

Let us see now what are the arrangements for the preservation of the health and the medical and surgical care of so vast a body of men suddenly thrown together in the field.

The Director General is the responsible head of the department and is charged with its administration. He nominates the officers for the different staff positions.

On active service the Principal Medical Officers are employed in the following capacities:—

(1) Principal Medical Officer of the field force.

(2) Principal Medical Officer at the base of operaions.

(3) Principal Medical Officer to each division.

The Principal Medical Officer of the field force has his headquarters with the General of Communications but is available for consultation with the Commander-in chief.

The Principal Medical Officer at the base under the Officer Commanding and the Principal Medical Officer of the field force has control of all hospitals at the base, and hospital ships together with all medical supplies.

The Principal Medical Officer of a division is on the staff and remains at the headquarters of the division.

To each unit in a division is attached a Medical Officer. This means that one Medical Officer is detailed to every regiment of the line when ordered for service; one to an artillery division; one to the divisional transport; and one to the remaining details, i. e. a squadron of cavalry, an ammunition column and a company of Royal Engineers. Together with the Medical Officers of the two bearer companies and the three field hospitals, this makes 30 Medical Officers actually in the field with every division, or 150 with each army corps besides the vast number employed in the stationary, general and base hospitals and on the hospital ships and those employed in special services; officers for garrison duties; officers for services to residents or natives of the country where military operations are in progress; sanitary officers; quarantine officers; bacteriologists and consulting physicians and surgeons. The divisional Principal Medical Officer selects a Medical Officer attached to a corps for Brigade Surgeon, who has under his charge all the regimental Medical Officers of his brigade. At the port or ports of landing are established the base hospitals, comprising a large staff of medical officers. The duties of these officers are varied, not the least being to prevent the introduction of any infectious or contagious diseases such as bubonic plague, cholera, small-pox, enteric fever, scarlet fever or other maladies likely to spread and play havoc with the troops. We undertand the necessity for every precaution of this kind when we remember that sickness has always been a greater decimater of the army than battle-

fields themselves. More die from sickness during a prolonged campaign than are killed in battle. In the Spanish-American war:—

329 were killed.
125 died of wounds.
5,277 died of disease.

The losses on the Union side in the Civil war were:—

44,238 killed in action.
49,731 died of wounds.
186,216 died of disease.

France lost from disease alone nearly 50 per cent. of the troops she sent to Madagascar. The *bete noire* of English soldiers abroad has always been enteric fever. Even in times of peace, particularly in India, scores of lives are lost annually. The career of many a young officer has been cut short at the commencement of his foreign service by enteric fever. In war its ravages are much more severe as the conditions are naturally more favorable to its spread. Thousands of fresh troops are hurriedly embarked on crowded transport ships and after many days or even weeks at sea, poured into a distant country, overtaxing all its resources of shelter, food and water. All sorts of camping grounds have to be taken up, perhaps under a trying climate and with an indifferent water supply and that frequently polluted. Or it may be an army or detachment finds itself closely hemmed in and besieged for weeks as at Ladysmith or at Kimberley, with bad drainage, polluted water, foul atmosphere and poor food—an epidemic of typhoid is the result. An effort was made to inoculate with typhoid vaccine as many of the troops starting for South Africa as possible. A final report upon the protection this treatment has offered will be exceedingly interesting. We are sorry to observe that one of the Medical Officers sent out to specially investigate this particular subject has himself succumbed to the disease.

The duty of examining in detail all troops as they land is a formidable one and necessitates a lot of work notwithstanding the fact that they have all been medically examined before their departure from England. It is nevertheless a wise precaution and must prove a great safeguard. Transports arriving with any contagious disease on board, which may have developed *en voyage* are quarantined and individuals afflicted or found unfit from any cause are detained at the base hospitals to remain there if chance of early recovery is expected or to be trans-shipped to England if permanently disabled.

The accommodation required at the base hospitals will vary according to the number of troops in the field and may mean anywhere from 1,000 to 3,000 or 4,000 beds. The regular hospital establishments of the town will not likely be large enough to afford accommodation for so great a number of patients and it will doubtless be necessary to bring into requisition other public buildings, such as the town hall, the churches or public schools. Generally speaking when patients

are likely to remain for some time, public buildings afford more comfortable quarters than tents and are better suited for the services of the nursing sisters.

As the troops advance and the lines of communication are extended it becomes necessary to establish other resting places for the sick and wounded. General and stationary hospitals, as they are called, are organized along the line of communication and are conveniently placed with reference to railway facilities, good roads and the amount of accommodation already existing in the shape of suitable public buildings, etc. These depots, which may be from fifty to one hundred miles apart are intended to house from 100 to 200 or 300 patients. One after another these stationary hospitals are organized, taking up positions as far advanced as safety will permit and near enough to the field hospitals to afford a rapid evacuation of the latter. As the army gets more afield it becomes necessary for the medical organization to be more self-contained and moveable. To meet these requirements we have the independent unit known as a field hospital. In an army corps of 40,000 men there are 13 such units. These are distributed as follows:—

1 Reserve field hospital with the commander-in-chief.

1 with each divisional commander.

2 to each division. This makes on an average about one field hospital to every 3,000 men. A field hospital is a moveable concern capable of accommodating temporarily one hundred patients. Its personnel consists of five officers, viz: 4 medical officers and a quarter master with 35 non-commissioned officers and men. The ground required for its encampment is 70 by 160 yards and its equipment consists of 40 tents distributed as follows:—

There are twenty-five tents for the sick and wounded. These tents will accommodate four patients each excepting in the case of the severely wounded who require more room and more attention when two only are put in a tent. Immediately in rear of the patients' tents are three tents—the surgery, the operating and office tents. Next to these are four tents for the Non Commissioned Officers and men of the Royal Army Medical Corps as nurses, etc., while close to these are the two water carts and kitchens, one of each on either side. Still further to the rear are three tents for the officers and behind all the horse lines and wagons and four tents for the men of the Army Service Corps. Outside of all in the rear is the mortuary tent.

By day a field hospital is recognized by a white flag with a red cross in the centre and by night by two horizontal white lights. At retreat, when the flag is lowered, a red lantern is run up.

The medical equipment for a field hospital consists of:—

2 surgical haversacks and water bottles.

2 medical companions and water bottles.

2 pairs field medical panniers.

1 fracture box.

1 pair field surgical panniers.

1 pair reserve field medical panniers.
1 antiseptic case
books and stationery.

Field hospitals are non dieted. The patients receive their field rations and such other extras and medical comforts as may be at the disposal of the Medical Officer in charge. The bedding consists only of a waterproof sheet and blanket for each patient. No bedsteads are supplied but very serious cases are if possible placed on a stretcher raised from the ground by resting on short stakes or crutched sticks driven securely into the earth.

In the selection of a site for a field hospital the more important considerations are :—

1st. As near to the dressing station as possible, but compatible with safety. This is important as the communication between a dressing station and field hospital will of necessity be either wheel or pack animal transport.

2nd. Near to a suitable road for the bearer company's transport.

3rd. Where a good water supply is at hand. An almost unquenchable thirst is a marked feature in the recently wounded and to be able to relieve this is a great God-send.

When another engagement is imminent the field hospitals should be emptied by convoys to the nearest stationary hospital so that they can be moved forward and made ready to receive the wounded from the battle field. When this is impossible such hospitals remain in the rear and become part of the medical accommodation along the line of communication and a reserve field hospital of the divisional staff or of the commander in chief is advanced.

As we approach the fighting line, mechanical and physical aid become more urgent than purely surgical skill. I mean by this the application of an improvised tourniquet to arrest haemorrhage; the adjusting of rough splints to fractured limbs, assistance to the slightly wounded in walking to a place of safety or to the collecting station, or the carrying of those unable to walk. It is here we realize how invaluable are the services of the men of the bearer companies—men trained in the use of the "first field dressing" and other temporary appliances and who are skilled in the art of removing the fallen from the field of action. The personnel of a bearer company consists of three medical officers and fifty-eight non-commissioned officers and men. For service in the field its equipment consists of :—

One operating tent, and operating table with mattress, eight stretchers and ten ambulance wagons, besides one water cart and service wagons and carts. The medical equipment comprises: eight surgical haversacks and water bottles, two medical companions and water bottles, one pair field surgical panniers, one fracture box and one antiseptic case.

The work of a bearer company commences with the commencement of a battle. The dressing station is selected at a suitable distance from the firing and in a sheltered spot, if possible near a supply of drinking water and near a road or passable ground for the ambulance wagons from the more immediate front to reach it conveniently. The dressing tent is pitched, fires are lighted, and hot water, beef-tea and other stimulants and restoratives are made ready. Dressings, instruments, etc, are laid out and every preparation made for the performance of both major and minor operations under as careful antiseptic conditions as it is possible to obtain. The bearer section proper, together with the ambulance wagons, moves forward to a convenient place for collecting the wounded. This is called the collecting station and is marked by a flag. A bugler is here for calls in the darkness or to give warning to the bearers to collect and retire if need be. At the commencement of a battle all the ambulance wagons rendezvous here and if required during the action will continue to ply between the collecting and dressing stations. If not a section of them may be detailed to remove the wounded from the dressing station to the nearest field hospital. The bearers work in two sections under the direction of a lieutenant with a sergeant in charge of each section. There are four stretchers in each section and four men per stretcher. These men have been taught to give 'first aids' and what immediate attention to the wounded is necessary is given by them and the patient if unable to walk is placed on the stretcher and taken back to the collecting station. He is lifted into an ambulance wagon, which on receiving its complement immediately starts back to the dressing station. The first aids consist in the application of the first field dressing, the administration of restoratives, etc. Each soldier on active service is provided with and carries on his person a dressing ready for immediate use. It is sewn into the frock of his serge or khaki and is composed of: 1st. A piece of gauze, 17 in. x 13 in.; 2nd., a pad of flax charpie between layers of gauze; 3rd., a gauze bandage 4¼ yards long; 4th., a piece of mackintosh waterproof, 12 in. x 6 in.; 5th., two safety pins. The antiseptic used is corrosive sublimate, 1.1000: it has an outer cover of cloth sewn and an inner cover of thin waterproof cemented so as to make it air tight. The directions for use are printed upon both the inside and outside covers. The man's clothes are not removed, otherwise he might be chilled, but slits are made large enough to apply the dressing and a tag, stating the nature of his wound, is attached to a button of his tunic or khaki—a most important provision inasmuch as it secures him against further unnecessary examination or interference until he reaches a suitable place for such further attention, as is necessary. The tag or specification tally indicates: 1st., his name and rank 2nd., number and name of his regiment; 3rd., a short description of his wound or wounds; 4th., precautions required in transport.

With a cavalry division the work of the bearer company varies somewhat, owing to their more rapid movements and the more scattered work required of cavalry. Naturally greater difficulties are experienced

in transporting the wounded. Instead of the stretcher, the use of which is almost impracticable in the cavalry service, men are taught how to assist the wounded into the saddle if able to ride alone, or how to help him to mount either in front of or behind a trooper. Rules are laid down how to handle the patient according to the locality of the wound. Pack animal transport is also useful with cavalry.

The light spring or market wagon found in this country and in some of the other colonies is a useful vehicle for ambulance work. Milk wagons and vans, such as are used by the large departmental stores, the latter especially would be very serviceable in war time. We sometimes deplore the absence of ambulance wagons, regulation or otherwise, in Canada, but I may say so far at least as this district is concerned and in view of what little responsibility might possibly fall to me owing to my connection with the militia force of Canada, I have never felt very much exercised. I am moved with a sort of proprietary feeling of more than ordinary dimensions as I see the vast number of vans belonging to these concerns threading their way through the streets of Toronto every day, and reflect that all these could be pressed into the service if needs be at a moment's notice. Have you ever thought what serviceable vehicles these would be in more ways than one on active service? The regulation medical transport consists of: The mark V ambulance wagon in use in the English army, which will carry 12 wounded all seated, or two lying down on stretchers and 4 seated. The mark 11 cart which carries 2 lying down or 4 sitting and while more convenient is not so practicable as the four wheeler because it is not so stable. For mountain work pack animals are used. A mule will carry two wounded men, one on either side seated in a cacolet or folding chair. Travois are used. Some of you will remember these in the North West. Dandies are employed in India and are carried by the natives There is also the Indian dooley. Our own farmers' country wagon, with hayrack filled with hay to the level of the rack, would be a most useful medical transport.

The dressing station affords the first opportunity for operations of a radical kind. On arrival, the wounded are unloaded and carefully placed on the ground, the more serious ones to the right and the less serious to the left. Green tallies are used for serious cases and white tallies for all other cases. The two medical officers in charge, together with a staff of non-commissioned officers and men, take charge of the arrivals and look after them in the order of their urgency. Such operations as are necessary are performed. The dressings, splints, etc., are re-adjusted if required and, after due attention, the patients are re-loaded and passed on to the nearest field hospital.

The smallest unit to which a complete medical equipment is applicable, with resources leading backward to the base, is a brigade The regimental medical service comprises only the necessary help for shifting the wounded to the nearest shelter. A very important supplement to

the work of a bearer company—a work requiring the same amount of skill and even more courage and bravery, because more constantly and closely on the firing line—is that of the regimental stretcher-bearer. The medical officer attached to a regiment has under his command one corporal, an orderly and two men per company as stretcher-bearers. These men belong to the fighting force, and, even if it were permissible, owing to the nature of their work, they could not receive special protection under the terms of the Geneva Convention. They are men who have been trained not only as regular soldiers, but they have also had special training at the Medical Depôt, Aldershot, in the work of the stretcher-bearer, and, instead of taking cover, rifle in hand, like their comrades, they place their rifles in the transport wagon, take up the regimental stretchers and, under the direction of the medical officer attached to their regiment, proceed to rescue the wounded. Keeping in touch with their regiment at all times, they hurry about here, there and everywhere. Oftentimes they are much exposed, and their energies severely taxed. The work these men do is most praiseworthy, and frequently calls for more than ordinary courage, and I fear, sometimes, like that of the medical service generally, is not fully appreciated. They are brave fellows, and while the hazardous work they often do may not receive any special recognition, they receive at any rate the "thanks" and the "God bless you" of their stricken comrades. Tommy is no coward, and though blunt of speech and, may be, rude in manner, he has a soft spot in his heart and appreciates kindness. He is as ready to give as to receive help. He loves his Queen, and is ready to do his duty no matter in what capacity he is called upon to do it.

Such are the services rendered by the medical officers and men, both of the regimental stretcher work and of the bearer companies. Together these form what is designated the first line of medical assistance.

The second line of medical assistance is that afforded by the field hospital.

The third line is the stationary hospital, and so on until we come to the hospital ship by which Tommy ultimately reaches Netley, the most famous military hospital in the world, where he is looked after by the medical staff and the nursing sisters. He receives every attention, is petted, humored and generally spoiled. Perhaps he is even honored by a visit from Her Most Gracious Majesty the Queen, and finally he is discharged from the hospital, receives a pension, and it may be a medal or two, and fancies himself a hero, while the brave stretcher-bearer who dragged him from the field of action, stopped his life blood from ebbing away and placed him on the road to safety is never heard of. But such are the fortunes of war. Another, not so favored, receives a more fatal wound, and finds a resting place in a lonely grave on the wide veldt, "unhonored and unknown."

Two important features in the handling of the sick and wounded in war have only just been alluded to, viz: railway transport and the more formidable undertaking, which England has always to make provision for, their safe return from "over the seas."

To enter into details with regard to the refitting of either the luggage or passenger cars of England or the continent and to give the various methods suggested and in use would be more or less tedious. It is a fact well recognized by those who have had the experience that the cars in use on this continent both freight and passenger are much more serviceable and much more readily turned into hospital trains than those of the European Continent. The ordinary luggage car or goods' wagon, as it is called in England, can be conveniently converted into a transport car. It will accommodate eight seriously wounded all lying down. By means of rope attachments to the ceiling or roof of the car two tiers of stretchers are supported with four stretchers to each tier, *i. e.*, from doors opening in the middle of the car four men can be stowed away at each end on stretchers swung in the air. The patients are comfortable inasmuch as they are free from the jolting and swaying of the car and they can repose snugly on the stretchers, but there is no communication from one car to another when the train is in motion. It is known as Zavodovsky's method and is a very good system as applied to the short goods' wagon of England and the continent, but our long passenger car affords equal accommodation for four times as many patients with direct inter-communication.

The English type of passenger car divided as it is into compartments admits of but little refitting, the patients occupying the compartments either sitting or lying on the seats as the case may require. The long corridor passenger car of this continent is very much more serviceable. With seats reversed lying down accommodation is practically at hand and a second tier can be readily adjusted with stretchers resting on the backs of the chairs, while the corridor affords free communication with the other pre-requisites of a hospital train. Our wagons are also readily constructed into permanent hospital cars by erecting standing frames on a line with the raised portion of the roof. The stretchers are suspended from these by india-rubber rings. If not heated from the engine, a stove in the centre of the car affords ample heating, while good ventilation is obtainable without draught by opening the panes along the elevated part of the roof.

A hospital train properly so-called and specially constructed for the purpose should comprise comfortable accommodation for the sick and wounded on lounges or accessible tiers of stretchers, a kitchen and provision car, a store wagon for the soldiers' kit, etc., and a car for the medical staff with free access to all parts of the train. The facilities for loading and unloading must also always be kept in mind. In this particular feature, the English passenger car has its advantage, opening as it does on the side with a door to each compartment. With the long corridor car opening at each end it is necessary to build a temporary platform or run up a flat car at the rear in order to pass the loaded stretchers over the rail and directly into the door. In this way the difficulty of loading or unloading our passenger cars is readily overcome.

Right of way cannot always be given to a hospital train. Food supplies and reinforcements for the front may be more important, hence the necessity for a hospital train, in the event of being side-tracked, to be self supporting and in possession of every comfort and every convenience for rendering assistance.

A great feature in the handling of the wounded is the rapid transit which railways afford. The patients are readily dispersed and the congestion in the stationary and especially the field hospitals, which is likely to follow upon severe engagements, is speadily overcome. Another advantage which good railway accommodation affords is the relief it gives to the commander-in-chief. He is not embarrased or encumbered by the wounded and incapacitated and can move on at his own convenience or as the exigencies of the case may demand. Scattering the wounded is an important feature from both a medical and surgical standpoint. It is a well recognized modern scientific necessity and is more readily accomplished where hospital trains are available. In the present campaign there are three specially equipped hospital trains which are rendering invaluable service—two provided by the local authorities of South Africa and one built by subscriptions collected by the Mayor of Windsor, called "The Princess Christian," being organized at her suggestion and under the supervision of the Central British Red Cross Committee. Tommy marvels as he sees all this luxury. He finds that his comforts ever increase as he nears the base and the bustle and din of battle are left far behind. But still greater surprises await him. Convenient and complete as are the regulation transport ships supplied by the Home Government, these have been supplemented in the South African campaign by what may really be called "floating palaces." "The Princess of Wales," "The Maine" and, "The Lismore Castle," and "The Avoca" quite surpass Tommy's comprehension and are far beyond anything he has hitherto experienced in the way of ship's comforts.

I am free to admit that never before has there been so much aid given to the Medical branch of the Service as on this war, not only by the various ambulance and Red Cross organizations in England and in the Colonies, but also by the liberality and private enterprise of both rich and poor throughout the whole of the British Empire. It is also clearly evident that never before have the services of the Royal Army Medical Corps stood out so strongly as in the present campaign. The work they are doing will go far towards restoring in England a confidence which the supercilious attitude and parsimonious behaviour of the war office have done much to destroy. At present the R. A. M. C. is practically the only department of the British army against which more or less serious charges of partial failure cannot be levelled. With reference to the efficiency of the work done by the Royal Army Medical Corps in the present campaign in South Africa and the untiring efforts of the Officers and men of this corps, let me quote from the words of a "South African Campaigner" as

they appeared in the *British Medical Journal* of the 3rd of February, 1900:—

BELMONT:

"In the action at Belmont on Nov. 23rd in which the first movement was made at 3 a.m., and which terminated at about 6.10 a.m. by the capture of the heights and the retreat of the enemy, the casualties, it will be remembered, were 54 killed and 238 wounded. "In addition 20 of the enemy's wounded were taken into the British hospital. Lord Methuen in his dispatch of Nov. 26th, written from Enslin, writes as follows with regard to the medical arrangements of this fight:

"'By 10.30 my division was in camp; by one all my wounded were in a comfortable house being carefully attended; by 5 p.m. next day the hospital train conveyed the less severe cases to Orange River, the graver cases to Cape Town. This is the most perfect work I have ever heard of in war, and reflects the highest credit on Col. Townsend, R.A.M.C.'"

MODDER RIVER:

"In this action which was fought on Nov. 28th, beginning at 4 a.m., the number of casualties was 72 killed and 396 wounded. Lord Methuen concludes his dispatch by the following observation of the work of the Royal Army Medical Corps: 'Again I call attention to the splendid hospital arrangements, for at 4.45 p.m. on the day after the fight all my wounded men were on the way to Cape Town. I am glad to have been slightly wounded because in no other way could I have learnt the care taken of the wounded, and there was nothing officer or private soldier required that was not provided at once and the medical officers never tired in their endeavor to alleviate suffering.'"

For heroism let me relate a case as reported by the special correspondent of the Medical Record, New York.

"After the battle of Colenso an officer of the Royal Army Medical Corps, Major Babtie, distinguished himself by a feat of courage and daring which it is to be hoped will be recognized by the military authorities. The R.A.M.C. already possess more Victoria Crosses than any other branch of the service and it now seems possible that Major Babtie's name will be added to the list of holders of this much coveted honor. During the thickest of the fight Major Babtie rode into the donga—the dried-up watercourse in which the British losses were most severe and where Colonel Long's guns had to be abandoned—and remained with the wounded through a hail of bullets doing what he could for them. Among others whom he attended under these terrible circumstances was Lieutenant the Honorable Frederick Roberts, the only son of Lord Roberts, V.C., the commander-in-chief of the British army in South Africa. Major Babtie's horse was killed under him, but he remained in the donga until firing ceased, doling out minim doses of water from his water bottle and rendering such first aid as was possible. It was extremely sad that Lieut. Robert's life could not be saved, but he was shot in the forearm, wounded in the knee by a shell and had in addition a perforating wound in the abdomen. When Major Babtie brought him back he was pulseless and died without rallying. He had

behaved with conspicuous gallantry throughout the engagement and had been recommended for the Victoria Cross, a decoration which his distinguished father gained in 1858."

A few words with regard to the purely professional part of the work of army surgeons.

The great bulk of the operating comes upon them with a rush. In quick succession wounded men are brought in from all sides, many of them needing immediate attention. No civil surgeon ever requires to use his judgment so promptly, decide so rapidly and act so quickly as the army surgeon and this too at high pressure. One case follows another perhaps for several successive hours until the surgeons are utterly exhausted. To save a life with or without the limb must be decided in a moment; what needs flash through the surgeon's mind; the precise nature of the wound; the man's physical condition; without amputation can he be removed with safety; how far it will be necessary for him to be transported before he reaches a safe, wholesome and comfortable resting place; what will be his sanitary surroundings and the attention it will be possible to give him there; the climatic conditions and what foods, stimulants and medical comforts are obtainable as he passes on to the rear.

In the present campaign the casualties, though large enough, have not equalled those of many former campaigns. It was thought that with magazine rifles, rapid firing guns and other modern improvements in firearms the destruction to life would be something appaling. Fortunately so far it has not been so.

The following are extracts from a table by the late Sir Thomas Longmore:—

At Blenheim, 1704, the British lost		23 per cent.
At Kunnersdorf, 1759, the Prussians lost		65 per cent.
At Talavera, 1809, the British lost		24 per cent.
At Albuera, 1809, the British lost		52 per cent.
In the Crimean War, 1854, the British lost		15 per cent.
At Gettysburg, 1863	Unionists lost	20 per cent.
	Confederates lost	46 per cent.
In the Franco-German War, 1870, the whole German Army lost		13 per cent.

Some regiments have suffered severely, especially those engaged in the heroic relief of Ladysmith, but the percentage of losses on the whole is not so great as those quoted above.

At Paardeberg the other day, the Canadian loss was nearly 3 per cent. killed and about 7 per cent. wounded, *i. e.*, their casualties were less than 10 per cent. The Canadian loss appeals to us and we say in all conscience it was large enough. This is true, but I make the comparison to impress ourselves with the happy fact that modern inventions and improvements so far are not tending towards a much greater destruction of life. And why? In the first place, tactics have changed and are changing immensely since the days of "the thin red line." And again, the use of firearms of greater precision, longer range and a wider dangerous zone has of necessity produced a bullet of small calibre. Amongst

civilized nations, soldiers are now armed with rifles firing hard mantled projectiles varying from 0.322 in. to 0.263 in. in diameter. The Boer is armed chiefly with the Mauser rifle, firing a mantled bullet about the size of our own Lee-Metford rifle—the Mark II Woolich bullet 0.303 in. in diameter.

Mr. Boer has not chosen the Mauser rifle because the bullet is a merciful one. This virtue is not a part of his nature or otherwise he would not be found firing upon medical officers, ambulance wagons and stretcher bearers while in the exercise of their merciful work, nor would he lure his enemy to exposure and to destruction by his treacherous use of the white flag—an emblem in war significant of distress and an appeal for mercy at the hands of the enemy. Oh no! We can rest assured he uses the rifle because of its precision and its effectiveness at long range. Nevertheless it is a merciful bullet and unless struck in a most vital part the recoveries from wounds in the present war are satisfactory and indeed sometimes even marvellous. The track of the bullet is narrow and the entrance and exit wounds are small. In the hospitals the wounded are playfully calling it a bug-bite. All sorts of penetrating wounds of the chest and abdomen have resulted favorably and without symptoms. Injuries to bones, to the larger joints and to other dangerous parts of the body are being followed by quick and very favorable recoveries. Hitherto surgeons have had quite a different story to tell with many long tedious cases to worry through.

The Roentgen Ray process, as you know, is a recent invention. It is quite old enough, however, to have made us familiar with the horrible bone-shattering effects of bullets, with fragments and sharp spiculæ of bone scattered through the tissues of the part. Now the same process reveals a punched-out perforation of the bone, as if bored by a gimlet, perhaps without either fracture or detached spiculæ, which are known to produce even more damage than the bullet itself. The work of the surgeon has materially changed. He has fewer bullets to extract, the bulk of them having gone through; fewer major operations to perform, such as excisions of the larger joints or amputations of arms or legs; and fewer fractures to set. Indeed there is more minor than major surgery in the field to-day. There will be fewer mutilated old soldiers about the streets of our cities in future. The Medical Officer will be more the physician than the surgeon, and this should be so, as all death statistics in wars shows. In the Duke of Marlborough's time, for services rendered, surgeons were promoted to the rank of physicians. England sent out famous consulting surgeons, but why not consulting physicians, especially when the dividing line is so definitely drawn between those two branches of the profession as it is in that country.

From the standpoint of mercifulness, a good authority has placed the bullets now used in the following order:—

1st. The Mauser

2nd. The Krag-Jörgensen, U.S.

3rd. The Lee-Metford, Mark II, Eng.

4th. Lee-Metford, Mark IV.

5th. Any of the last three with soft noses.

6th. Dum-dum.

7th. Remington brass-coated as used by Filipinos.

8th. Remington lead bullet.

9th. Remington brass-coated with point ground off.

10th. Shrapnel.

11th. Shell fragments.

Our notions with regard to the classification of wounds are now somewhat different from those which have obtained up to the present time. Wounds have been regarded as fatal, dangerous, serious or slight according to the parts of the body struck, the extent of the injuries inflicted and the nature of the missiles producing them. These are the three features which mark the gravity of a wound. It is chiefly with regard to the first mentioned, viz:—'the part of the body struck' that there has been so marked a change tending towards favorable recoveries. Wounds which have been regarded as dangerous or even fatal from a regional point of view have not even been serious as proven from results.

From available statistics, Sir Thomas Longmore has shown that hitherto the proportion of killed to wounded has been, on an average, as 1 to 4. This of course refers to those found dead in the field. Formerly a pretty large proportion of those who reached the nearest hospitals died within a day or two. "During the Russo-Turkish war of 1877-78, 11.8 per cent. of the wounded under treatment died in the army of the Danube and 13 per cent. in the army of the Caucasus." Here I venture to say are two changes which will mark the difference between the firearm of precision and the old "Brown Bess" the smooth bore, the Minié, the Enfield, the Snider, or the Martin-Henry rifle. Soldiers taking advantage of cover or occupying trenches will expose only their most vulnerable parts and if struck at all are more likely to be fatally wounded. Even when on the attack and more or less wholly exposed, as were the Canadians at Paardeberg, the ratio of killed to wounded will be greater. In that engagement our own men lost 21 killed and 69 wounded or about 1 to 3.

I am satisfied that on the field the proportion of killed to wounded, instead of being as formerly 1 to 4 or less, will now be more nearly 1 to 2, but amongst those wounded and carried off the field the ratio of recoveries will be very much greater than formerly. The percentage of deaths from wounds in the hospitals of South Africa is not at hand, but reports received are very encouraging. Sir William MacCormac, President of the Royal College of Surgeons, England, whose services as a consulting surgeon were accepted by the War Office, in an interesting account to the London Lancet amongst other things says: "In the hospital at Wynberg near Cape Town, I saw a large number of injuries inflicted by the Mauser bullet which is remarkable for the small wound it produces." Doubtless some contraction had taken place in the healing but the size of the entrance and exit

wounds was much smaller than the end of a lead pencil and quite circular." He describes in detail perforating wounds of the body cavity and of bones, which in their limitation he would, from previous experience, pronounce quite impossible and the prompt recovery from which was most surprising to him.

Mr. Treves relates a case where the bullet entered above the clavide and came out on the inner side of the opposite thigh, there being no symptoms except temporary shock.

At Solferino in Lombardy, Italy, on the 24th June, 1859, was fought one of the most fiercely contested battles of modern times. It was the final engagement of the war between Austria and the combined forces of France and Italy. Solferino is a small village on the road from Brescia to Mantua. Here four French army corps led by the Emperor Napoleon III, and four divisions of the Sardinian army commanded by Victor Emanuel were opposed to an immense Austrian force under the command of Emperor Francis Joseph. After 16 hours hard fighting the allies lost 18,000 killed and wounded and the Austrians 20,000. In this engagement the number of wounded on both sides amounted to between twenty and twenty-five thousand men.

The inability of the medical organization of these armies to handle such a host of wounded men, many of whom had to remain on the field unattended for days, led to the suggestion from which the Geneva Convention originated. Five years afterwards in 1854 an International Congress assembled at Geneva,—Switzerland, at that time not having a standing army, being regarded as neutral ground. At that meeting 16 European powers entered upon a mutual understanding with regard to medical assistance in war. Since that time more than double this number of States have subscribed to the articles of the Convention, the chief features of which are the neutrality of the sick and wounded of opposing armies, as well as that of the personnel and material in connection with the care and treatment of all the afflicted.

Instead of being regarded as prizes of war, all medical officers and attendants, bearer companies, field hospitals, ambulance transport and medical equipment generally are considered as free from any interference at the hands of an enemy. It is strictly stipulated however that all help of this kind must be distinctly military or under military control and non-combatant and is especially recognized and protected by the use of the Red Cross on a white ground. More recently the use of explosive bullets has been discountenanced by those nations subscribing to the articles of the Geneva Convention. It is true that England has found in some of her engagements with savage tribes that the fully mantled bullet had not the desired stopping effect. In the Chitral Expedition, for example, it was found necessary to grind down the tip of the bullet until the leaden core was visible. This experience led to the manufacture of the Dum-dum and other varieties of open nosed or hollow-nosed bullets, such as the Woolich Mark IV, the "solid base open nose," the "open nose with slits," the "tubular plugged with wax," the "tubular copper plugged", etc. There are also soft-nosed bullets in which the

lead is more or less freely exposed at the tip and consequently flattens out very readily. These, mostly of larger calibre than the Lee-Metford, are chiefly used for sporting purposes, especially when hunting large game.

The bullet in use in the English army to-day, however, is fully mantled and hence non-explosive in the sense in which this term was used by the Conference at St. Petersburg in 1868, when the principal military powers of Europe agreed:—"To abstain from the use of all explosive projectiles of less than 14 oz. in weight."

These are briefly the protective features of the Geneva Convention, it being universally acknowledged that the main object in a battle is not to kill men, not to blow them limb from limb, nor to torture the wounded by long exposure and inattention, but to render as many as possible *hors de combat.*

A CASE OF PERFORATING GASTRIC ULCER WITH INFECTION BY THE BACILLUS AEROGENES CAPSULATUS; WITH A SYNOPSIS OF THE LITERATURE ON INFECTIONS BY THIS ORGANISM.*

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The following case occurred at the Toronto General Hospital in the fall of 1898, in the service of Dr. J. T. Fotheringham:—

A.B., act 32; occupation, reporter. For many years he had suffered from gastric dyspepsia, and was suddenly seized the day before admission with violent abdominal pain, at first felt mostly in the epigastric region. Persistent vomiting set in, with tympanites and great abdominal tenderness, the pulse becoming rapid and thready. He died in collapse in 36 hours, no gas formation being noticed ante mortem.

The autopsy was done 20 hours later by Dr. H. B. Anderson. The first thing to be noticed was the large size of the scrotum, which had become immensely swollen and crepitant throughout. Emphysematous crackling could also be felt in the thighs, especially the right, and cover slips taken from both these localities showed a bacillus, whose description morphologically agreed precisely with the Bac. aerogenes capsulatus or gas bacillus, of Welch. Post mortem staining was fairly well marked and rigor mortis was passing off. Upon making the incision into the peritoneal cavity gas escaped quite abundantly, and burnt with a pale blue flame, emitting an explosive sound when ignited.

The omentum was slightly adherent in the right iliac fossa and somewhat congested. The surface of the bowels was red and injected and the intestines were to some extent adherent by the presence of a fibrino-purulent material. Where the great omentum was attached to the stomach

*From the Pathological Laboratory of Trinity Medical College.

there was a collection of pus. Cover slips, both from the pus and the purulent material showed the presence of the same bacillus. Anaerobic cultures were made by melting tubes of agar, inoculating one tube and pouring the contents of another over it so as to exclude the air from the growth below. Cultures were thus made from the heart's blood and several of the viscera.

The appendix was in its normal situation and inflamed only to an extent equal to that of the rest of the peritoneal cavity. The spleen showed two fissures passing transversely across its diaphragematic surface, but no gas was noticed. The liver presented evidences of perihepatitis and was soft and friable. No gas was evident. Old adhesions between the pylorus and the gall-bladder were abundant, some of them extending on to the liver surface. The mucous membrane of the stomach was greatly thickened and congested, the follicles very prominent, especially at the cardia. Four cicatrized ulcers were plainly visible along the greater curvature. Through the base of one of these, perforation had occurred where the stomach and gall-bladder had become adherent. The pleural cavities were normal, no adhesions. Heart : bubbles of gas were present in the heart's blood and gas cysts in the myocardium were numerous. Cover-slips showed the bacillus in large numbers.

The inoculated culture-tubes were placed in the thermostat, with the result that their contents were greatly cracked and fissured by the production of gas. The tubes were then broken, and fresh media inoculated, the conditions necessary for their growth being brought about in a Novy-jar, in an atmosphere of hydrogen. By this means a bouillon culture was obtained and a rabbit and pigeon inoculated with the bacillus, its morphology and pecularities of culture being studied. From both the pigeon and rabbit the bacillus was again obtained in pure culture, as proved by cover-slips and its growth on different media. In agar-agar, the colonies are greyish-white in color, flattened and possessed of irregular margins. Bubbles of gas appear in the medium, with the result that fissures and cracks almost disintegrate the medium. There is no liquefaction. In gelatine, the appearance of the colonies is much the same, and a slight amount of liquefaction takes place immediately about the growth. The growth in bouillon is very rapid and abundant, the medium soon becoming cloudy, and the turbidity gradually forming a white deposit, leaving the fluid above clear. The odor has been likened to sour, stale glue. In milk coagulation occurs rapidly with the formation of gas bubbles in the clot, and where litmus-milk is used it turns deep pink upon exposure to the air. On potato a greyish-white growth appears, and there is marked gas formation. Upon blood-serum, spores may form.

After failure to inoculate satisfactorily by the posterior ear vein, the animal was anaesthetized, the jugular vein exposed, and the quantity of a bouillon culture contained in a Koch's syringe injected into the blood stream. Ten minutes later the rabbit was killed and placed in the thermostat. After twenty hours an autopsy was done. At this time the animal was greatly swollen, crepitation could be felt distinctly, especially in the axillae and groins. Upon incision through the skin a disagreeable

odor was exhaled, the subcutaneous tissues being discolored. The axillae and groins presented numerous gas bubbles, many of them of large size, so that an incision permitted the escape of a gas which emitted an explosive sound and burnt with a pale blue flame when ignited. Upon incision into the peritoneal cavity no gas was detected. Gas bubbles were present everywhere, in the clots, within the heart, in the myocardium, and under the pericardium. The lungs showed sub-pleural gas-bubbles, the kidneys when cut into showed many bubble cavities and retroperitoneally, large gas-cysts were easily discernable. The most striking features, however, were presented by the liver. Its capsule was completely disintegrated, and the organ itself seemed as if worm eaten. It was a most excellent example of a "foaming liver." The hepatic veins also contained gas.

Cover slips from different organs and the blood showed a bacillus of the same morphology as the one found at autopsy and when cultures were made from the rabbit colonies grew on the different media in no respects differing from the growths resulting from the original cultures. Some of the tissues were hardened and stained, and the bacilli were demonstrated. Bacilli were also seen in the walls of the gas-cysts.

A bouillon culture was likewise injected into the pectorals of a pigeon, which, next morning was found dead, with rigor-mortis marked. In this case, the result was mostly local, with marked emphysematous crackling in the pectoral region. The muscles exposed by incision were quite gangrenous, pale in color, and very emphysematous. The superficial and deep pectorals were separated by a large cavity. No pus was present, but a dark red fluid oozed out of the wound. Cultures and cover-slips again identified the same bacillus. In all respects this resembled the Bac. aerogenes capsulatus of Welch.

Instances of gas occurring in the tissues both before and after death are common enough, but only in the last few years has a satisfactory explanation been forthcoming. Previously it was thought that the presence of air or gas noticed in the tissues of the body, was due to the fact that air had entered the veins during some surgical procedure, or, when post-partum, the large uterine sinuses afforded ample opportunity for its admission. It was sometimes believed, too, that air had gained entrance by the alimentary tract, as a result of perforating gastric ulcer, for instance, and that death had followed partly from this cause.

Experiments carried on by Nysten and Hare showed that amounts of air varying from 40 to 120 c.c., in direct ratio to the size of the dog, could prove fatal if injected suddenly into any large vein. Hare believes that no quantity of air which could possibly enter a vein during an operation would be large enough to produce sudden death, and this would seem the most rational view. By cautious injection at intervals, a large volume of air may be introduced into the venous system with no untoward results, and Laborde and Munroe demonstrated that 1120 c.c. might be passed into the jugular vein of a dog within the space of ninety minutes with apparently no injury. This goes to show that large amounts of air

suddenly introduced may cause death, but it leaves a large number of cases in which bubbles of air were found in the vessels and viscera, post-mortem, unexplained, and the theory advanced by Ewald and Kobert, that the air in the cells of the lung was capable of being forced into the pleural cavity and blood vessels under pressure, or the idea that air could be spontaneously generated there, hardly clears matters up.

In 1891, however, Welch and Nuttall, described an organism which was isolated from a case that after autopsy permitted its anaerobic cultivation, and which they named the Bacillus aerogenes capsulatus. The patient was a brick-layer, suffering from an aneurism of the ascending aorta, who died suddenly after his admission to the hospital. He had had severe haemorrhages from a spot where the tumor had ulcerated through the skin, but on admission did not seem alarmingly ill. His appetite was good, and his mind clear. Eight hours after death an autopsy was done at which it was noticed that emphysematous crackling could be felt over most of the body. Gas-bubbles were found in the heart's blood, in the cardiac veins and arteries and in the myocardium. Large cavities existed also in the kidneys, liver and spleen, and cultures and smears, made from the organs and blood, demonstrated a capsulated bacillus in large numbers.

Briefly, this bacillus offered the following description: Its breadth is slightly greater than the anthrax bacillus, but it varies much in this, as also in its length. It is straight or slightly curved, with rounded extremities, non-imotile, and stains deeply with the ordinary dyes, and by Gram's method. Capsules are often seen and involution forms commonly occur. It is anaerobic and grows upon all the ordinary culture media.

In order to grasp clearly the clinical conditions under which infection may occur by the Bac. aerogenes capsulatus, a hasty and necessarily brief summary of some of the cases published so far, will be given, for by the thorough acquaintance with the clinical aspect, recognition of further cases will become easier and more frequent.

The publication in America of the second instance of infection of this kind was in August, 1893, by Graham, Steward and Baldwin. Their case occurred in a woman who had evidently attempted abortion, and who, when first seen, was suffering most intense pain in the uterine region, in the back, and down the right thigh. Later, the pain had made itself felt in the left ovarian region and down the left leg, the abdomen was slightly tympanic and she was exceedingly restless. After a few hours, she was seen to be "emphysematous from the top of the head to the sole of the feet." Death occurred suddenly without any warning

Fraenkel in January, 1893, published the report of a case of infection by the Bac. aerogenes capsulatus, and for the first time pointed out the essential relation of the gas-producing bacillus of Welch to those diseases known as emphysematous cellulitis, gaseous phlegmon, &c., in that the bacillus isolated and described by him was identical in all respects to that described by the American authors. Fraenkel's cases each followed hypodermic injections.

P. Ernst also reported two cases in which the bacillus he isolated proved to be identical with the Bac. aerogenes capsulatus. One case was that

of a woman from whom a four months old macerated fœtus was removed, and who died later from septic peritonitis and endometritis. Gas was only noted after death.

Mann's Case is instructive from the fact that it shows the possibility of infection during life in association with the Streptococcus pyogenes, and rapid spread of the process with marked constitutional reaction, recovery following energetic treatment.

Welch's and Flexner's unfinished paper in the Journal of Experimental Medicine affords us many examples from which to draw conclusions concerning infection by the gas bacillus, the most important and instructive of which will be briefly alluded to. In their third case, injury occurred to a man who fell from a wagon, sustaining injury to right hip and thigh. There was no external wound. The skin over the thigh was much swollen and reddened, emphysematous crackling being easily obtainable on the inner side and in the popliteal space. At autopsy, a traumatic rupture of the rectum was discovered.

Case ix of this series; a man with typhoid, died of symptoms of perforation of the bowel. At autopsy, this diagnosis was found to be correct, and a small opening, 39c. above the cæcal valve was found. The peritoneal cavity was filled with gas, and the Bac. Ærogenes Capsulatus was shown to be present in abundant numbers in the peritoneal exudate.

Instances might be multiplied showing the different phases of infection by this Bacillus, but reference must be made to the list at the end of this paper for futher details; for infection may occur at any time and under all circumstances when ordinary innoculation and growth could be expected. The pathological anatomy, however, is peculiar to infection by the gas-bacillus, and while depending on many conditions, may be briefly summarized as follows:

The nervous system; as shown by Reuling and Herring, large or small gas-cysts may occur in the cerebrum, with destruction of the grey and white matter. The walls of the Cavities are smooth, devoid of any lining or sack, and a layer of degenerate cells, with complete absence of nuclear staining, alone forms the boundaries of the cyst. The capillaries, round about, are completely blocked in many places by crowds of bacilli.

The digestive system; the results here depend upon the point and mode of infection, of course, the influence of this must always be considered, but the liver is the organ often affected most severely. When cut into this organ may appear riddled with cavities containing gas, whose walls are again lined with degenerated cells, this time hepatic. Blood containing many bubbles of gas, oozes from the cut hepatic and portal vessels, producing hillocks of foam on the cut surface, and giving rise to a very strange but characteristic appearance. The spleen fares likewise, though generally not so markedly. The Malpighian bodies are indistinct, and on pressure bloody, frothy fluid is squeezed on to the cut surface. Of the renal system, the kidneys are most commonly affected, so that gas-blebs may appear under their capsules, and on section, foamy material may be squeezed from the blood-vessels. Gas-cysts are frequently seen. The heart often shows marked changes, the myocardium being of

a pale color, often containing small cavities. Gas-cysts may be seen under the endocardium and the pericardium. The blood in the cardiac cavities contains many bubbles of gas. And so the different organs are separately affected, yet the amount of charge depends directly on the kind of infection, the mode of infection, and when the examination is made.

From what has gone before it may be concluded that the Bac. aerogenes capsulatus is widely distributed in nature. It may gain entrance to the tissues by any abrasion of the skin, by way of the pulmonary system, or from the alimentary tract, where it is probably a constant inhabitant, by a perforating gastric typhoid or other ulcer, and through any part of the genito-urinary system; after operation on the urethera or following child-birth or abortion, infection is relatively common. The effects of the organism may be plainly visible before death, showing that it is capable of growth in the living subject, but probably the bacillus is most commonly distributed just before the circulation ceases, so that its results are more often noticable a few hours later. A terminal infection by the Bac. aerogenes capsulatus is common enough, instances being recorded by Welsh and Flexner, Norris and others. The low resistance of the tissue brought about by long drawn out sickness, creates the condition—wherein the opportunity for the germ to gain a foot-hold is assured. Indeed this loss of resistance is essential in all cases. The relation of the Bac. aerogenes capsulatus to gaseous phlegmons, malignant cellulitis with production of emphysema, is assured. The local infection may remain so, and be amenable to energetic treatment, as illustrated by Mann's case, but it is frequently general, the emphysema being first noticed often far distant from the point of infection, either before or soon after death.

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NEURASTHENIA.

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This is so extensive a subject that it would be impossible to discuss in the limited time at our disposal, more than few points in regard to it. Our increasing knowledge of the subject will ere long lead to a division of this multiform disease which only a few years ago was unmentioned in our text books, but the importance of which, leads to the necessity of further classification, so that some distinguishing name would indicate the special form of neurasthenia under consideration. The analogy; between the term neurasthenia, and that of Bright's disease, is striking and just as in the latter we have conditions which originally indicated kidney disease in general, so we have in neurasthenia, a term indicating an affection of the nervous system, but as Bright's disease was later classified into various kidney troubles as known to-day, so will time and further knowledge more clearly designate divisions in what we now term neurasthenia, a change which is urgently demanded from a clinical standpoint. As already stated, the limited time to-day will only allow of the discussion of the some of the phases of neurasthenia, and of these I would like to draw your attention to two of the most important. (1) The so-called "spinal irritation" and (2) the mental results of certain forms of this affection. In regard to spinal irritation, it was long supposed to be due to a lesion of the spinal cord or meninges, and this led the earlier authors, (notably among whom we find Rosenthal), seeking to explain its pathology in this manner, to classify it with diseases of the spinal cord. That this is an error, is, I think, now generally conceded; Bouveret among other having expressed himself very positively on this point. A consideration of the facts shows the correctness of this negative view. But it was to a more definite solution of the problem of the seat of spinal irritation that I hoped to direct your attention to-day, and this is, that instead of the trouble being due to changes in the spinal cord or local structures, I believe that it in reality is *psychical*. This belief has been forced on me, in the first place by the nature of the pain complained of. The hyperæsthesia is fully as intense as is met with in hysteria, which is avowedly an affection of the higher centres Cases of this nature frequently occur, in which the slightest touch on the vertebral column or on either side of it calls forth expressions of the most intense pain. I recall one in which I directed the nurse to begin tapping the spine gently with two rubber balls mounted like hammers, and in a few days the patient could bear quite a severe pounding with these balls without any complaint, in fact she seemed to enjoy it, a condition which would not have been reached had there been any local affection sufficient to induce the degree of pain of which she originally complained. Simply because such pain is situated over the spinal cord, I do not think we are any more justified in assuming it to be due to a lesion of the cord than we would be to assume that the anæsthesia of a limb or one half the body, as is frequently met with in hysteria, is due to a lesion of the underlying structure. Why in

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neurasthenia, the spine should suffer in this way so frequently is more difficult to understand, but if we consider that the spinal column with its muscles and its supply of ligaments is so constantly in action during the waking state, the fact that it should suffer early when nervous weakness arises is easily comprehensible, the degree in which it suffers being influenced by hereditary predisposition or otherwise. Whilst the action of the muscles of the back is largely automatic, the impulses from the higher centres are called upon more frequently as the nervous action which is sufficient in a normal state becomes weakened by disease, and this increased demand on the higher centres gradually induces in them a condition of irritation which is expressed peripherally by the deranged sensations in the structures of the dorsal region. The localization of the pain in certain spots, as in the "plague sacrée" of Charcôt, or as in the tenderness to pressure of certain spinous processes, may be due to a slight strain of the ligaments or muscles, which has taken place without the attention of the patient being especially attracted to it, and which would never have developed but for the existence of the nervous weakness. A case in point is one of a young lady who, after having led an active out of door life with plenty of exercise, became neurasthenic and one day in lifting a book felt a sudden pain in the muscles of the forearm. This subsided in a little time and only recurred on making a sudden effort with the arm which was otherwise quite well. The strain was in this case due, not to any local trouble in the forearm, but to a lesion of the higher centre of the brain, and disappeared entirely as the central nervous system regained its normal tone, as is frequently seen in cases of traumatic myalgia. In an analagous manner a lesion of the spinal structures may develop producing an irritated centre in the brain which gradually increasing, shows itself in the symptoms known as spinal irritation. The importance of the suggestion that the real cause of the trouble is psychical rather than physical, is very great in consideration of the treatment.

We now come to the second phase which was mentioned above, namely the question of the relation between neurasthenia and incipient mental disease. Authors generally, consider that neurasthenia terminates, only as an exception, in mental disease. I believe, on the contrary, that certain forms of neurasthenia (especially those affecting the intellect or the emotions) *frequently* do so. This belief is based on clinical experience, and is supported by the researches of Hodge. The latter, as you are all aware, demonstrated with the microscope, the changes which take place in nerve cells after physical fatigue and electrical stimulation, and showed that after an excessive degree of fatigue, the cells recovered their normal condition only with difficulty, or not at all. This whole subject has been ably discussed by Tuke, who maintains that the changed conditions of the cells of the cortex, probably combined with the toxin introduced in the blood through deranged metabolism of these cells, must naturally lead to a disturbance of function of the higher centres of the brain, which unless corrected, must necessarily lead to definite mental disease. He says that "In the course of almost every case of idiopithic insanity, *i. e.*, insanity due to over-exertion of the brain, we have a fairly well marked prodromal period indicating the diseased balance between nutrition and

function in the kinæsthetic area. On the rapid removal or non-removal of the causes of implication of the cells of the Rolandic area, depends the issue of the case—recovery or prefrontal atrophy." This prodromal stage with its results is precisely to what I desire to direct attention, as I believe that this stage corresponds in many cases, to what we term neurasthenia, and that proper treatment at this period would avoid the disastrous results which would otherwise follow. A consideration of insanity shows that in nearly all cases prodromal symptoms must in some stage of its develop ment have been present. As cases of insanity are described by the alienist under whose care the case comes, only when fully developed, the transition stage between mental health and insanity has been but little discussed, and in consequence a fertile field has been left uncultivated. These cases of neurasthenia are given an additional interest by the fact that they comprise cases on the border-land, where one or more of the faculties may be affected, the remainder remaining normal. Hence in an early stage, when the approach of the coming storm is heralded only by such symptoms as restlessness, intense and unreasonable anxiety, loss of or deranged memory, inability to do any prolonged mental work, disturbed emotions, worry over trifles, irritability, etc., with loss of sleep, the treatment of these cases would show most satisfactory results, whilst in no class of cases are the consequences of delay more serious.

Of the beneficial effects of treatment, none are more marked than in the removal of the patient from the surroundings in which the neurasthenia has developed An important point in regard to separation is that if used at all, it must be complete; a single visit from a near relative or an intimate friend or even a letter from such, may seriously affect the progress of the patient toward recovery. In regard to the rest cure as described by Dr. Weir Mitchell, I have found it most useful in selected cases, and the underlying principles of it form undoubtedly the most valuable contribution which the treatment of neurasthenia has ever received. Rest is the keynote to the proper treatment of nervous weakness, and it is the proper application of this principle which makes or mars the success of our efforts. Rest in bed is only one form of rest, and may be contraindicated. Travel, with the resulting change of scene and surroundings is another form of rest, but great care is required in the selection of suitable cases. Many a patient is advised to travel when the change only irritates and excits an already weary brain, or an easily exhausted body, and leads to unsatisfactory results, because treatment of a different kind was necessary before travel could be undertaken with pleasure or safety. The same error is often made in regard to exercise, the fact that physical movement necessarily involves an expenditure of mental energy, being often overlooked. Hence while exercise may may be freely insisted upon in some cases, in others it must be very carefully regulated in its amount. Time forbids further discussion of the medical treatment or of the use of massage and electricity in this affection, but I would like to mention the decidely good results of hydrotherapy when used in conjunction with these measures. In conclusion, neurasthenic patients often state that they have been given this advice "Now just believe you are all right and there will be nothing the matter with you." There are undoubtedly neurasthenic patients who exaggerate their ills, but I am convinced that these are

much fewer than is generally supposed, and that when we can learn the patient's character in the past, further study of these subjective symptoms will often prove their reality. Although we cannot percuss or palpate to demonstrate the exactness of the descriptions given by these patients, we can impartially estimate the truth of their assertions, and after careful consideration of the symptoms, save them by proper medical treatment from what, in some cases at least, would have resulted in irreparable disaster.

SELECTED ARTICLES.

NEPHRITIS.

DIAGNOSIS OF CHRONIC INTERSTITIAL.—Charles O'Donovan remarks that the occurrence of Cheyne-Stokes respiration in advanced stages of fatty heart and toward the end of the life of persons suffering from one of the various forms of Bright's disease, as well as in other conditions of coma or allied states, has long been recognized. At such times it is merely one of the many features marking the probability of an early fatal termination of the case, and attracting attention only as an interesting symptom of little diagnostic value. But this form of respiration may be one of the first symptoms observable in cases of chronic interstitial nephritis, giving warning of the sclerotic changes at a time when albumin is totally absent from the urine, or so infrequently present or in so small quantity as to elude ready detection. Of three personal cases noted, the patients all presented this form of breathing, first at night exclusively; and even at any time only at irregular intervals. Careful observation over quite an extended period of time failed to show a single instance of its occurance during the waking hours; when it appeared it was during sleep, otherwise calm and restful, and not influenced in any way, as far as could be discovered, by any particular posture or change of posture in the individual.

From experiments on the elimination of methylene-blue through the kidney in health and disease, E. V. Czyhlarz and J. Donath conclude as follows: In nephritis there is a retardation of the elimination of methylene blue through the urine. This manifests itself either in the late appearance of the dye in the urine or in the abnormally prolonged persistence of its urinary elimination, or in a combination of the two.

Charles Alling Tuttle declares that urinary examinations, as ordinarily made in the physician's office have but little value, and that the toxicity of the urine often affords the best and safest means of diagnosis. Chronic interstitial nephritis can exist without albuminuria, casts, or the usual clinical symptoms of kidney impairment, and albuminuria of measurable amount and renal casts may be present and yet the health of the individual be unimpaired through many years.

Rockwell lays especial stress upon the danger of overlooking chronic interstial nephritis, especially in its earlier stages. Whenever he finds

the specific gravity of the urine of anyone over forty years old constantly too low—1,005 to 1,015, especially when obtained during the height of digestion—he expects to find hyaline casts if he looks long enough for them. The urine, even with this low specific gravity, is usually distinctly acid, is pale and clear, containing little or no sediment, in marked contrast to the chronic diffuse form. The subject often has occasion to rise at night to pass his water. Albumin may be present or absent. It is never in large amounts. In such sediment as one is able to get, preferably by the centrifuge, may be found hyaline casts, cylindroids, and an occasional leucocyte. The urine may be preserved with borolyptol. A quantity should be placed in a conical glass, allowed to remain overnight when all but a small portion is decanted, and the remainder is put in a centrifugal machine; in this way casts will be obtained if they are present. In the diagnosis of this form of nephritis one is greatly aided by examination of the heart, for hypertrophy begins early. Arterial tension is high from the beginning, and the second sound at the base is usually accentuated.

Irvin Linderberger has found that certain drugs in renal as well as other affections militate at times against a proper diagnosis as regards conditions of the system, by a urinary examination; especially is this true after the administration of urotropin. Having the power of dissolving casts and probably other solid matter, it makes the diagnosis of nephritis by microscopical examination impossible.

The treatment of digestive disturbances with hydrochloric acid, pepsin being given generally in connection with it, will make the matter of diagnosis of oxaluria at times difficult or impossible.

If a twenty four hour specimen cannot be obtained, one passed on retiring and a specimen on rising should be called for, mixed, and examined. Especially in the early morning specimen, in cases of chronic interstitial nephritis, is the albumin very much diminished or absent altogether, this deing due to the period of rest during sleep. The addition of a few drops of formalin will retard decomposition during the warm months, and not interfere with any of the tests for albumin or sugar.

In examining urine for casts J. H. Linsley considers the following method of most value: A few drops of the urine which contains the sediment is removed with a pipette and placed on a clean, glass slide. No cover-glass is used in this manipulation. The slide containing the specimen is then placed on the stage of a microscope and a $\frac{2}{3}$ inch or $\frac{1}{2}$ inch (No. 2 or No. 4) objective brought into the optical axis of the instrument. A higher power of the microscope should never be used for the detection of casts in the urine. The next step, the illumination of the specimen, is so important a procedure that without careful attention to the details of its application no casts will be seen, even though there be hundreds of them on the glass slide under observation. The opening in the diaphragm should be reduced until the specimen is only faintly illumined, and the mirror, using its concave side, turned in such a way as to direct oblique rays of light through the slide and objective.

When hyaline casts are present in a specimen which has been mounted in this manner, they appear as sharply defined, somewhat refractive, and perfectly transparent diminutive logs, with rounded ends

After carefully examining the specimen with the lower power, a cover-glass may be applied, the superfluous urine removed with a piece of blotting-or filter-paper, and the specimen investigated with a 1/5-inch or 1/9-inch (No. 5 or No. 7) objective. In this case more light is needed, and the opening in the diaphragm must be enlarged. The higher magnifying power allows the study of the structure of any casts or epitheliel cells and the detection of pus or blooded cells and bacteria, but it should never be employed until after a thorough examination with the low power.

ETIOLOGY.—C. W. Larned says that the conclusions to be drawn from a study of the relation of chronic nephritis to malarial disease are: 1. Certainly in some localities malarial fever should be given a prominent position in the etiology of chronic, as well as of acute, nephritis. 2. In all cases of malarial fever the urine should be closely watched. 3. A blood-examination should be made in all cases of nephritis occuring in those who have visited or lived in a malarial district, as it often happens that the severe grade of nephritis resulting may mask entirely the clinical picture of malarial fever.

PATHOLOGY OF ACUTE INTERSTITIAL.—W. T. Councilman has discovered acute interstitial nephritis in 42 cases of infectious diseases, most frequently in diphtheria and scarlet fever. The interstitial tissue in these cases is infiltrated diffusely and in foci by cells resembling the plasma-cells of Unna. No satisfactory explanation can be given for the almost constant tendency of the infiltrating cells to collect, especially in the boundary zone of the pyramids, the subcapsular region of the cortex, and around the glomeruli.

PROGNOSIS.—R. C. Cabot and F. W. White, from the study of a number of hundred cases of nephritis, say chronic nephritis is not an incurable disease; recovery occurs in rare cases. It may exist for years without causing apparent constitutional disturbance. The average duration in 332 cases of chronic nephritis was 19 months. Acute nephritis is less common than has been supposed, many cases that were formerly so classified are found to represent exacerbations of chronic nephritis.

DIET IN CHRONIC NEPHRITIS.—Von Noorden says that he has not found in all the literature a single exact clinical experimental basis for the exclusion of dark meats in chronic nephritis, but only hypothetical affirmations over the greater content of irritating products (especially nitrogenous extractives) for the kidneys in brown meat. In a personal case, a patient, with chronic parenchymatous nephritis, who took one-half pound poultry daily for five days, excreted the same amount of nitrogen and a trifle more albumin than he did in the next five days, in which, instead of the poultry, he took an equivalent amount of nitrogen in beef.

In many cases, also, a restriction of the amount of fluids to 42 or 50 ounces can be of great advantage. This treatment is peculiarly applicable to those cases with cardiac asthma and dilation of the heart. Patients with interstitial nephritis suffer no diminution in the elimination of the important metabolic products by the restriction of liquids to 1¼ litres.

TREATMENT OF ACUTE NEPHRITIS.—In acute Bright's disease Walter Sands Mills advises that the patient be put to bed and kept there until all acute symptoms have subsided. The room must be kept warm and at an even temperature day and night. Milk is the best food, and may be flavored with coffee, salt, or soda-water. Some patients will take more kindly to butter-milk or to koumyss than to plain milk. Gruel may be sometimes used to advantage.

The use of tea, coffee, alcohol, and spiced foods must be stopped until after the patient is convalescent. The drinking of large quantities of pure water—several quarts daily—is essential. Lemon-juice added to the water is very beneficial and may be taken *ad libitum*.

As the acute symptoms subside and convalescence is established, meat broths, soft-boiled eggs, and fruits may be added to the bill of fare. A full diet of the character usual to the patient will have to be adopted slowly and with caution, always closely watching and noting the slightest changes in the urinary secretion.

To help eliminate excrementitious matters, diaphoretic treatment is to be resorted to.

The patient may be wrapped in dry, hot blankets and given hot drinks. A more effective way, but one that is dangerous in cases with heart-lesions, is to give the patient a hot-air bath. This can be done by completely covering the patient, except the head, with blankets, in such a way as to form a sort or air chamber, and devising some apparatus to heat the air underneath. The hot-air bath ought to last no longer than twenty minutes. Care must be used lest the patient take cold; a rub-down afterward with alcohol and water will help to prevent that.

The hot pack is another method that may be used. This consists in wrapping the patient in a sheet wrung out in hot water and wrapped round about with blankets. This hot pack may be kept up for from a half to one hour. Finally the hot water bath may be utilized. This may last for half an hour. It is an advisable procedure to rub the patient thoroughly with dilute alcohol both before and after either the hot air or hot water treatment.

Pain over the kidneys may sometimes be relieved by dry cupping.

If the bowels are constipated and the urine is scanty, calomel may be given in $\frac{1}{8}$ to $\frac{1}{4}$ grain doses, repeated every hour or so.

If uræmic eclampsia or coma is impending, the treatment by means of hot air or hot water, as outlined above, must be resorted to. Active depletion is usually done by the use of pilocarpine hypodermically, $\frac{1}{4}$ to $\frac{1}{8}$ grain at a dose.

In uræmic dilirium personal success has been with hyoscyamus.

The œdema of nephritis will often respond promptly to infusion of apocynum, ten to 15 drops being given every hour.

For œdema of the lungs alone, apis mellifica is to be used in a 1 to 100 preparation, $\frac{1}{2}$ drop doses being given every half hour until relief is apparent.

Cantharides has a beneficient action on the kidney of acute nephritis. It is best given in drop doses of the tincture. Later, when the dropsy has gone down, but albumin still remains, bichloride of mercury will be found to be of service. Drop doses of a 1 to 10,000 solution are efficient.

The anæmia of acute Bright's disease is to be treated with iron and cod liver oil. Inhalations of oxygen are also of value for this symptom.

Nestor Tirard regards the degree of œdema in acute nephritis as an indication of the probable extent of the engorgement of the kidneys. The treatment must be primarily directed to the relief of the dropsy. Diuretics are contra-indicated in the early stages of acute nephritis, since they increase the caliber of the renal vessels and thereby promote rather than relieve the renal engorgement. Vapor baths, hot and cold packs, the warm bath accompanied by the drinking of large quantities of water, and sometimes the administration of liquor ammonii acetatis are valuable. When these measures fail to induce diaphoresis, pilocarpine may be given hypodermically. When diaphoretics fail, hydragogic purgatives, such as compound jalap powder, or a mixture of jalap and scammony powder, may be given. Œdema of the glottis may sometimes be relieved by scarifying the aryteno-epiglottidean folds. If this fail, intubation or tracheotomy must be done. When removal of the effusion from the extremities is necessary, Southey's tubes are to be preferred to all other measures. Cardiac failure should be combated by the administration of stimulants by the mouth or hypodermically.

TREATMENT OF CHRONIC NEPHRITIS.—As a guarding principle in the treatment of chronic nephritis A. R. Elliott repeats the words of L.G. Guthrie, who gives the motto: "Watch the heart and pulse." Herein is the surest way to the successful management of this widespread disease. Sooner or later the morbid process must end in death. But this termination can be longest postponed, the patient's interest can be best served, and his condition most securely palliated by placing the heart upon a therapeutic parity with the kidneys.

Caracciolo believes there is no certain correspondence between the amount of albumin and the renal disease. Mineral waters containing small amounts of salts are useful unless there is considerable polyuria, when the amount of fluid should be somewhat restricted. A moderate mixed diet is better than an absolute milk diet. The diet which is so consumed as to take albumin from the tissues is that which will give the maximum repose to the kidneys. This is to be determined in each case by accurate comparison between the food ingested and the ejecta. Cold baths should not be used, but the skin may be methodically hardened by moist friction on leaving the bed. Strontium lactate (6 grains a day) tends to diminish the albuminuria.

Cantharides is recognized by Julius Salinger as having distinct curative powers in chronic parenchymatous nephritis. The tincture should be given in small doses (1 to 2 minims), as an overdose is irritating to the renal epithelium. The following prescription may be recommended: Iron and ammonium acetate, ½ ounce; tincture of cantharides, 2 minims. —*Monthly Cyclopædia.*

DIPHTHERIA.

In the *Journal of the American Association*, Dr. Jerowitz writes as follows :—

(1) The majority of cases are mild and only affect the fauces.

(2) The exudate lasts from one to two weeks, but to this there are exceptions.

(3) Removal of membrane is useless, as by denuding the surface, septic infection is promoted, and, besides, the membrane quickly reappears and remains longer than if it had not been meddled with.

(4) The involvement of the larynx is always sudden, and comes as a a new attack, and not by extension of the diphtheritic process.

(5) The larynx becomes involved in about four per cent. of cases.

(6) Every case complicated with uræmia had post-diphtheritic paralysis.

(7) Laryngeal involvement is most to be dreaded between the ages of three and five.

(8) Intubation and tracheotomy will become less and less necessary as the value of antitoxin is recognized.

In discussing treatment, he says :—

(1) The first thing noticed after using antitoxin is a reaction, an immediate effect, showing that antitoxin is a powerful agent.

(2) In every case in which I administered antitoxin in the proper dose, the membrane disappeared inside of three days. Without its use, while I have seen patients get well in the same length of time, yet the majority of cases lasted from ten to fourteen days.

(3) In all cases in which I employed antitoxin in the beginning, the larynx did not become involved, and uræmia did not occur, while in cases treated without antitoxin the larynx became involved frequently, and uræmia also followed.

(4) In cases in which the membrane involved the larynx, trachea, and even the bronchial tubes, recovery followed when treated with antitoxin, while the same class of cases before the use of antitoxin always resulted fatally.

(5) Neglected cases, complicated with septicæmia and laryngeal involvement, do not recover with any treatment.

(6) In severe cases of dyspnœa, with occasional cyanosis, the use of antitoxin and emetics has obviated the necessity for tracheotomy.

(7) Measles as a complication is no bar to the use of antitoxin.

(8) In laryngeal cases, complicated with uræmia or nephritis, antitoxin was followed by favourable results, thus proving that uræmia and nephritis are not necessarily contra-indications to the use of that agent.

(4) As paralysis was seen to follow only the cases of long duration, those in which antitoxin was administered early were not followed by paralysis. Of those in which it was given on the second or third day, it occurred in about eight per cent. From this it follows that antitoxin does not prevent paralysis, except indirectly by cutting short the disease.

(10) Place of injection, behind the scapula. No abscess or other bad result followed

(152) POST-PARTUM HAEMORRHAGE: ITS PREVENTION AND TREATMENT.

E. Davis (*New York Med. Jour.*, January 13th) says the chief causes are local and general exhaustion. Less common are genial lacerations, blood diseases, and placental adhesions. Prophylactic treatment should always be carried out. Each case of pregnancy should have individual attention, and tonics given if necessary, the woman being scientifically prepared for her "labour." During labour, in its first stage, the patient should have plenty of liquid food, and loss of sleep should be specially avoided. To prevent it, chloral hydrate gr. x should be given every three hours. Sometimes am. bromide grain xx or trional gr. x will give better results. In the second stage "posture" is of primary importance. If it is instrumental the writer always prefers ether as the anæsthetic, and slightly continues it during the third stage, in order to repair any lacerations. Tears in the anterior vaginal wall near the urethra frequently cause hæmorrhage, which becomes worse from pressure of vaginal tampons. On recovery from the anæsthetic, ergot should be given. The pressure on the uterus should be exerted only upon the anterior and posterior walls, and not at the fundus. If there is danger from relaxation, $\frac{1}{30}$ gr. of strychnine should be administered and a rectal injection of freshly made coffee. For after-compression of the uterus three towels made into firm rolls 8 inches long and 3 inches diameter may be applied under the binder The uterus is brought well down and forward, and one roll is placed above and one on either side of it. The strychnine may be repeated if relaxation continues. During actual hæmorrhage the writer employs hot saline injections 104° F. to 110° F. and packs the uterus with gauze. After 24 to 36 hours the gauze is removed and the uterine cavity douched with salt solution. Ergot ℥xx and strychnine sulphate $\frac{1}{40}$ gr. are given six hours for several days. The writer always in writing instructs his obstetric nurses to massage the uterus, administer a douche of two quarts of previously boiled water at 110° F., and give two teaspoonfuls of ergot (fluid extract) directly profuse hæmorrhage occurs and until he arrives. —*Brit. Med. Jour.*

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(92) LABOUR COMPLICATIONS AFTER VAGINAL FIXATION.

Rühl (*Cent. f. Gyn.*, 1899, No. 51) calls attention to the severe labour complications which may follow both vaginal fixation of the uterus and ventri-fixation. The predisposition is greatest in the vaginal operation when the top of the uterine body is fixed to the anterior vaginal wall; and in the abdominal operation, when the fundus itself is immovably fixed close above the symphysis. The obstruction to labour may be so serious that although the pelvis be of normal dimensions, Cæsarean section may be required. In passing he calls attention to the fact that Cæsarean section, when performed for this cause, has been attended with a very high mortality, amounting to 50 per cent. In a normal pregnancy at the fortieth week the long axis of the uterus lies exactly at right angles to

the plane of the pelvic inlet. In the pathological conditions under consideration the fundus is fixed much lower than it should be, whilst the cervix is drawn up and retroposed, with the result that the uterine axis may make an angle of only about 40° with the plane of the inlet. When the uterine contractions occur under these conditions, the tendency is for the presenting part of the child to be driven backwards against the sacrum, instead of downwards and backwards in the pelvic axis. The cervix may be drawn so far up and back as to lie above the level of the sacral promontory, and the true pelvis may be bridged over by the anterior wall of the uterus and vagina in such a way as to leave between the anterior lip of the cervix and the sacrum no room for the passage of the child or for the manipulations necessary for artificial delivery. In these cases the author advocates an anterior utero-vaginal section, consisting of an incision passing through the anterior lip of the cervix, the anterior uterine wall and vagina. Special care is needed to avoid injury to the bladder. As much natural dilatation of the cervix as possible should be obtained before making the incision.

THE EXTIRPATION OF THE SEPTIC PUERPERAL UTERUS.

Prochownick (*Monatschrift fur Geburtshulfe und Gynakoligie*, Band ix., Heft 6) contributes a very interesting paper upon this subject. He draws attention to the fact that mortality of the puerperal state has not been lessened as greatly as was hoped when antiseptic precautions began to be taken in labor. He estimates that in Germany from three to four thousand deaths occur yearly from puerperal septic infection, and from eight to ten thousand cases in which death does not occur, but in which the patient's health is more or less damaged. He has found the treatment by serum useless, and has given attention to the problem of finding out when the septic puerperal uterus should be extirpated.

It is evident that this serious procedure is justifiable only when it is positively known that the uterus is the site of the infection, when other means have been employed without result, and when the patient is evidently getting worse. He calls especial attention to the importance of studying each case during the first two days of the puerperal period without disturbing the patient by long examinations. Each puerperal patient who has fever should be kept as quiet, as clean, and as comfortable as possible. The pulse, temperature, and respiration should be carefully recorded every four or six hours. Especial importance is attached to the condition of the pulse. The intestine should be emptied once in the most thorough manner possible. The patient should be once examined verycarefully and thoroughly. If the pulse reaches 100, the heart, the lungs, and the spleen should be examined thoroughly, and the urine should be taken by catheter and subjected to examination, and the lower portion of the birth-canal should also be examined. Lacerations, either closed or without suture, and fissures in the perineum and vagina should be thoroughly examined. If no focus or infection is found, and the pulse does not exceed 100, no further examination of the birth canal should be made.

When the patient's condition is serious, and she has chills, high fever, a small and rapid pulse, the vagina should be douched with warm, sterile water, and some of the lochial discharged should be taken from the cervix. A careful bimanual examination should also be made. These measures, however, can rarely be carried out satisfactorily in private practice, and it is evident that some other method giving positive information is very desirable.

For some time the writer has practised the regular examination in such cases by taking cultures of the blood. The region of the elbow and the forearm are antiseptically prepared, and with a sterile syringe ten cm. of blood is taken from a vein, and a portion of it mixed with sterile bouillon, and the remainder placed in a sterile glass as soon as possible. Cultures are made from this blood and incubated, and in from twelve to twenty-four hours the results may be obtained. In his experience a fatal result has occured in each case in which streptococci were evidently present in the blood. When, however, the blood was free from germs, all of the patients recovered but two, who perished from purulent peritonitis occasioned by streptococcus invasion through laceration in the vagina and crevix. When, however, it was impossible to remove suppurating decidua or pieces of placenta or moles, or when after labor myoma had become infected, and when the patient had a small and rapid pulse and distensions of the uterus and abdomen, the cultures from the blood were positive and the cases demanded the removal of the uterus. Cases of incomplete abortion furnished many of these patients.

He also raises the question as to whether the removal of the uterus is not more appropriate in cases where rapid absorption of toxins is going on from the uterus rather than where virulent bacteria are found within the blood. While this query is difficult to answer, he draws attention to the fact that a negative culture from the blood in a severe case shows that typical pyæmia is not present, but does not make sure a favorable result. This method of examination is especially useful in preventing useless and harmful local interference. It especially justifies the absolute rest treatment employed in the first days of a septic case. When the cultures of the blood remain negative the uterus should be cleansed and douched with fifty per cent. alcohol, and should improvement not follow, its extirpation must then be seriously considered.

The writer sums up his experience by stating that he cannot decide upon extirpation of the uterus from the results of examination of matter taken from the vagina or uterus, but that he considers the examination of the blood of far more importance. If pyæmia is present, complicated with tumors in the pelvis, suppurating portions of the ovum or septic criminal abortion, extirpation of the uterus is not indicated, because it can rarely save the patient. If, however, it is evident that the uterus alone is pyæmic, and that these complications are not present, then the removal of the uterus may be followed by a good result.—*American Journal of the Medical Sciences.*

THERAPEUTICS.

For the Sweating of Tuberculosis.—*Riforma medica* for September 5th attributes the following to Siefert:

℞ Agaricine..... 7½ grains;
Dover's powder .....113½ "
Powdered mallow, } of each ..... 60 "
Mucilage, }

M. Make one hundred pills. From one to two to be taken in the evening.

Incontinence of Urine in Elderly or Nervous Women.—The *Cincinnati Lancet-Clinic* for November 4th quotes the following from the *Medical Press and Circular*: When there is a frequent desire to pass water, or it runs away in the act of coughing, sneezing or laughing, it is generally due to the want of power in the vesical sphincter. In such cases tincture of cantharides will be found of the greatest service if given in small doses of one minim in water three or four times daily.

To Prevent the Loosening of Teeth.—When it is desirable to counteract a tendency to this condition the following mouth wash is recommended:

℞. Ac. tannici.....	8	(℥ii.)
Tinct. iodi	4	(℥i.)
Potassii iodidi.....	1	(gr. xv.)
Tinc. myrrhæ	5	(glts. lxxx.)
Aq. rosæ.....180		(℥vi.)

M. Sig.: A teaspoonful in water to rinse mouth every two hours.—*Healthy Home.*

For Hæmoptysis.—For syphilitic hæmoptysis, give mercury, the following prescription being recommended:

℞. Strychnine sulphate..... 1 gr.
Corrosive sublimate..... 1 gr.
Pepsin .....30 gr.
Powdered licorice root..... q. s.
Divide into 32 capsules.

Dose: One capsule every 4 hours.

The green iodide, potassium iodide, and syrup of hydriodic acid may also be given.

For rheumatic hæmoptysis, the salicylate of sodium is the one remedy.—*Charlotte Medical Journal.*

Ointment for Hæmorrhoids.—Nehigan (*Therapist*) prescribes the following ointment for hæmorrhoids:

℞. Compound tincture of camphor.....	4	(℥i.)
Camphor.....	4	(℥i.)
Belladonna ointment.....60		(℥ii.)

M. To be applied directly to the painful part.

PALATABLE EFFERVESCING QUININE:

℞. Quininæ sulphatis	4	(℥i.)
Acidi citrici	10	(℥iiss.)
Syrup simplicis		
Syrupi aurantii cort. āā	1	(xv.)
Aquæ destillati q.s.ad.	20	(℥vi.)

M. Sig.: Add ten or more drops to about 50 grms. of water, in which 0·3 grm. of bicarbonate sodium has previously been dissolved, and drink while effervescing.—*Ibid.*

ATROPINE IN SEROUS DIARRHŒA OF NURSLINGS.—The *Riforma Medica* gives the following:

℞. Sulphate of atropine	1/10 of a gr.
Distilled water	450 grs.

M. From 1 to 3 drops may be given, but the general condition must be closely watched, and 3 drops must not be excluded.—*Ibid.*

Would Surgery Suffer if Iodoform was Abolished

E. C. Brush, in the *Journal of the American Medical Association* of December 16, 1899, sets out to answer the above question. He says the use of iodoform is on the wane, and he desires to further restrict its use. Accordingly, a large number of letters were sent to various surgical clinics asking certain questions relative to the value of iodoform and the frequency of its use. The first of these was, "What germicidal powder do you prefer?" Of the eighty-four replying, twenty-seven used iodoform, twenty-four used no powder of any kind, twelve used borac acid, and eight used aristol. The remaining thirteen used acetanilid, nosophen, iodol, etc. To the question, "Have you seen any bad effects from using iodoform?" seventy-three reported that they had seen bad effects, and eleven had not. Four of the eleven had seen no bad effects because they had not used the drug. Thirty-seven thought that the drug could be abolished without any detriment to surgery, and forty seven believed that the detriment would be in a general way; twelve limited the loss to the treatment of surgical tuberculosis, and eight considered the loss to be only when it is used in connection with the manufacture of surgical dressings and in specific cases.—*Medicine.*

Antiseptic Purification of the Meatus and Adjacent Parts.

Prof. Urban Pritchard (*Journal of Laryngology, Rhinology and Otology*, March, 1900) describes in detail the method worked out by Mr. Arthur Cheatle and himself. This purification treatment is especially adapted to the following cases:

1. When the membrane tympani is intact, and there is no suppuration. Here its use renders the surfaces of the meatus aseptic, and so allows the surgeon to operate on growths on the walls, or to open into the tympanic cavity without infecting the deeper parts.

2. When suppuration and perforation of the membrane tympani already exists, either (a) where operations, such as the removal of polypi, granulations, or necrosis, are required, or the curetting of carious spots; or (b) chronic otorrhœa.

In suppurative cases, absolutely scientific asepsis is not possible, or essential, for if we can reduce the dose of septic poison sufficiently, the natural sterilizing power of the tissue will exert itself.

In the first class of cases, an hour or so before operating, the meatus is syringed with a 1 in 40 carbolic solution, and then mopped out with 1 in 20, and the whole aurich scrubbed with the same. A strip of double eganide gauze well wrung out in 1 in 20, and twisted into a loose cord is lightly packed into the meatus, and a pad of similar gauze applied firmly over the whole article. This gauze is used in the after dressing, and any syringing required is done with 1 in 40 carbolic solution.

In the second class of cases, (a) the canal is syringed out with 1 in 40 once or twice a day for a week previous to the operation, and afterwards if necessary. If the case be very septic, as in caries, the strip of gauze should be dipped 1 in 20 and tipped with powdered iodoform, made into a paste with the same strength of solution. This tip of gauze is removed daily, and a solution of 1 in 40 used to syringe the ear.

Granulation and polypi operated on in this way, especially if the carious surface is also curetted, yield excellent results. Frequently the whole discharge ceases from the time of the operation, and the whole heals within a week or ten days.

In (b) the ear is to be purified as above, using iodoform if the discharge is very offensive. The strip of gauze should be packed down so as to fill the deeper two-thirds of the meatus, and then a second smaller piece used to fill up the remainder. This dressing is to be repeated once a day, or once in two, three or more days, as necessary, and continued for at least ten days after the discharge has ceased, and after that a light, dry piece of gauze is to be worn and changed at intervals for several weeks.

The neglected cases of chronic otorrhœa answer to this method, especially where there is a persistent fetid discharge not large in quantity, and not involving the further inaccessible parts of the attic and antrum. It is not suitable where the discharge is very abundant or when sub acute otitis is present, until these have been checked by other means.

WISHART.

THE SURGICAL AND MECHANICAL TREATMENT OF DYSMENORRHEA.[1]

BY

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The question may be asked of physicians generally, and of gynecologists particularly, "Is dysmenorrhea treated with greater success than it was twenty-five years ago?"

If the question were asked with reference to many other disorders peculiar to women, we might with truth give an affirmative reply, for surgery has revolutionized the treatment of many of the disorders of the pelvic organs of women. An exception is therefore made, and it is the intention of your essayist to briefly mention some methods of treatment more or less in vogue, and to pass judgment upon them, which may or may not meet with the approval of this Society.

This paper will, therefore, deal chiefly with those forms of dysmenorrhea believed to be "obstructive" or to require some means of altering the shape or size of the uterine canal. The whole subject of dysmenorrhea is far too wide to be discussed in a paper like this, which must be read and considered in one short evening. We will, therefore, first consider briefly the varieties, and then some methods of affording relief. The vast number of women who suffer pain at the monthly period would almost lead us to suggest that it is the rule for women, at some time during their menstrual lives, to suffer in this way. Indeed, many very excellent observers incline to the opinion that nearly all young women do suffer inconvenience, if not severe pain, at the period. We are often, indeed almost constantly, reminded of the amount of suffering due to the menstrual function, and we must all confess how powerless we are to more than mitigate its severity in most cases. We have every reason to believe that a very large proportion of our young women who are students of high schools, academies, and colleges do suffer greatly from dysmenorrhea, so much so that they frequently lose one, two or three days from their duties each month. No other proof of this statement is wanted than the well-known professional belief that all young women students would have better health could they be relieved of work during the menstrual period. But we have no time to consider this part of the subject, further than to note the influence of modern educational methods and of social customs upon the development of this now almost universal disease. As neurasthenia is becoming so prevalent, so is dysmenorrhea likewise almost always present in neurasthenic women who menstruate. But, aside from these neurasthenic cases, there are many cases of dysmenorrhea which appear to be due to some other cause than a neurosis. Authors divide these cases into constitutional and local, but for this evening we will only discuss those cases we believe to be due to some form of obstruction.

[1] Read before the Washington Obstetrical and Gynecological Society November 17, 1899.

Symptoms.—The symptoms of obstructive dysmenorrhea are not classical nor even constant. We sometimes see women suffer greatly with bearing down pains, like those due to the expulsion of an ovum, yet such cases do not always prove to have large, or even any, accumulation within the body of the uterus. The pain is then often "expulsive," and out of proportion in severity to the size of the clot or membrane or amount of blood expelled.

Again, these cases having expulsive or bearing-down pains do not always have stenosis. The flexion, if present, is not always marked, and if there is a slight stenosis the uterine sound will easily enter through the internal os. We often see quite as much or perhaps more pain in those cases having a small ("infantile") uterus and scanty flow. We have, therefore, some difficulty in reaching a decision in any case, even with the aid of bimanual examination under anesthesia, as to the cause of pain. The symtoms usually presented in girls and young women, although expressive of great local pain, often are accompanied by backache, cephalalgia and other reflex or constitutional disturbances, all adding to the difficulty of making a diagnosis and of affording prompt and permanent relief. (It is generally supposed by the profession that real obstruction, due to a stenosed cervix, causes a retention of a considerable quantity of menstrual blood within the uterus, that this retained blood causes uterine colic, etc. In may be expelled in quantity, as with a powerful uterine contraction, or slowly, drop by drop, after softening and dilatation of the cervix is sufficiently accomplished. It has not been my good fortune to meet with a single instance of this kind where dysmenorrhea was the only, or even the chief, symptom. Obviously, these cases give rise to hematometra and similar conditions, which are not infrequently seen and treated by every gynecologist.)

Let us, then, in view of these rather serious hindrances to a clear and easy diagnosis, suggest, as far as possible, only medical, or at least no surgical, methods in the treatment of young and undeveloped women. It is my great desire to protect the young women, especially virgins under 21 years of age, from examinations, and especially from instrumental or so-called surgical treatment of dysmenorrhea. We must, in rare instances, make these examinations of young women, and, as generally suggested, rectal examinations will reveal all that is necessary or desirable to learn of the virgin pelvic organs.

In the absence of pelvic infection or severe displacements, it must be exceptional that we need resort to surgical intervention for the relief of dysmenorrhea. Personally, I wish to enter a protest against the common practice of regarding these slight malpositions of the uterus as the cause of dysmenorrhea. There is often a cause elsewhere than in the uterus itself, and it is our duty to ascertain this cause and remove it, as far as possible. We will also accidentally find many cases of displaced uteri which have never given their possessors any pain.

Excluding the young, undeveloped woman, and all others having constitutional or other general or local causes for dysmenorrhea, we will find occasionally a sufferer from what we believe to be congenital or acquired obstruction or stenosis. This obstruction may, in rare instances, be due to malposition of the uterus, its body or neck, or to traumatism, etc. How shall we treat such cases?

First exclude other pelvic mischief, such as results of tubercular or other infection of any of the pelvic structures. In every case which has resisted the usual medical treatment, the consultant or specialist should make an examination under anesthesia. The uterine sound has probably been passed and the specialist will probably be told that it passes with difficulty. However, we recommend as of the utmost importance this administration of anesthesia in all chronic or persistent cases. It is unnecessary to say this here, for we all recognize the value of the information to be gained and the possible advantages which may accrue to the patient. We often find prolapsed and adherent ovaries and Fallopian tubes where such a condition has not been suspected. It is our duty to release these imprisoned organs. Some will accomplish this by massage, and with gradual and methodical, not to say patient and persistent, effort accomplish what may be done at one sitting. By this I do not wish to say that massage is not to be used, but we are not speaking of the massage treatment of pelvic disease at the present time. If the uterus is strongly flexed, repeated replacement, or even massage as suggested by Dr. Dudley, of Chicago, may be tried, but we have no positive evidence that the result of such efforts warrants any hope of important or even partial relief.

The mechanical relief of dysmenorrhea would include the application of pessaries in those cases where a displacement appears to be the cause of pain. My belief is that relief is not often afforded if the pain is due to alteration in shape or size of the uterine canal. Not so with "conjestive" cases, however, or in those having a degree of prolapse, for these are often relieved. Given a case of real stenosis, which only admits a small sound or probe, and which, in our opinion, barely permits the escape of the menstrual flow, what is the best, safest, and speediest method of cure, if there be a cure known to the profession short of sacrificial surgery? Pages might be written on the treatment of stenosis by intrauterine stem pessaries, etc. The diversity of opinion now existing in the medical mind proves how uncertain is the relief afforded by these and similar devices. Some authors, speaking with force and great authority, suggest divulsion, curettage, and packing with gauze in about all of these cases. They see *endometritis* at the bottom of each case.

It is doubtful if any uterus was ever cured of a flexion by a stem pessary, unless inflammatory changes induced by its presence helped to maintain the organ in position. (It must not be forgotten that, in nearly every case of flexion of the uterus, the body of the uterus itself has undergone changes at the flexure, due to defective circulation, pressure, atrophy, etc, Dysmenorrhea may be due to these changes in the muscles of the uterus as well as to those of the mucous membrane. Obviously, the routine, divulsion, curettage, or even use of intrauterine stem, must fail to cure such cases.)

In anteflexion we have other resources to suggest than the use of stem pessaries, while in retroflexion or retroversion, of surgery, it may be said, very little is left to be desired to at least overcome the displacement.

In mild cases of stenosis of the internal os we have, in some instances benefited patients by dilatation and insertion of Outerbridge's silver wire speculum stem, which permits drainage and prevents the return of the os

to its former size. But even with this in position and an easy escape of blood provided, we may find that some other cause must be found to explain the great pain experienced by the patient. It is, however, a useful instrument, and can be used with less danger than the large hard-rubber stem.

The writer believes that, while forcible divulsion in some rare instances may relieve dysmenorrhea, it is an operation of great danger and ought to be done by experienced physicians only, who will know how to care for the patient in case of accident. We say this with knowledge and speaking after many observations of permanent damage done to patients previously free from organic disease. We do not believe competent men do the greater number of these operations, but we do know, from many statements of patients and physicians, that this and many so-called minor operations are done by incompetent and ill-advised parties, who promise no danger to their patients, while in numerous instances the train of woe resulting is a long one, and a sad one too.

NOTE.—Bland Sutton calls attention to the fact that we must estimate the size of an internal os as we withdraw the sound, because of obvious difficulties in entering the cavity.

Excepting operations requiring removal of intrauterine growths, the writer has not divulsed a uterus for several years. He believes the operation generally unnecessary, and he knows it is the rule for "divulsion" to be rarely of permanent benefit. If any one thinks, by extreme nerve pressure produced in this way, he can relieve pain in a sensitive cervix, all well; but their should be little need of extreme lacertation of muscular or even of mucous tissues. Gradual dilatation with steel sounds or small dilator, just before a monthly period, occasionally does lessen the pain, although there is no great amount of stenosis present; but this does not continue, and unless we use this tentatively, or during the months required to restore the patient's general health, we fail to provide permanent relief. Slight dilatation does, however, suffice in some instances to indicate the kind of treatment required.

With reference to the utility of "discission," our limited experience does not suffice to furnish an opinion. We have rarely though such an operation indicated and have consented to its performance only a few times. Slight incision of the external os uteri is, however, occasionally required, and if the canal is kept open by an Outerbridge wire speculum or continued packing with gauze, some relief may be obtained. The writer has performed these operations more for the relief of sterility than for dysmenorrhea.

Divulsion of the cervix was first practised and taught by Sir James Simpson, who used the bilateral incision. Sims gave the weight of his opinion in favor of antero-posterior incision, and, as all know, cut the anterior wall as well as the posterior lip when necessary in acute anteflexion. But even in my very limited experience the operation has repeatedly failed, and, without mentioning its failure to cure at the time of operation, its object is not obtained, for both incisions generally reunite and the final effect of the operation is *nil*.

Dr. Skene favors an operation upon the anterior vaginal wall intended to straighten the flexed uterus, but the writer is not convinced of

its efficacy for the relief of pain. Finally, we must consider Dudley's modification of Sim's operation, and we take pleasure in noting its chief merit—namely, *that the canal of the uterus can be made to stay open*, a desideratum beyond the reach of all other operations which do not produce excessive traumatism.

The writer has practised Dudley's operation in two instances. One of these cases occurred in a young, single woman, age 33, who had been treated by one of our best physicians for at least ten years without relief. She had the typical symptoms of obstructive dysmenorrhea, with acute anteflexion, but also had the neurotic type of the disease. It was a matter of opinion which was *post hoc* or which was *propter hoc*, The smallest sound could with difficulty be introduced into the cavity of the uterus. Her uterus had been dilated many times, and she experienced some relief from this during the first twenty-four or thirty-six hours of her flow, usually the time of her greatest pain.

It was decided to try Dudley s operation for the relief of the stenosis. The posterior lip and lower third of her uterus was thoroughly divided until a large (No. 16) sound easily entered the cavity of the body of the organ. Then the incised posterior lip was sutured into the angle of the incision, high up, so that very little raw surface was left, and at the same time presenting a future closure of the canal by granulation. The relief was not important at the next succeeding period, but this was due to the very nervous condition of the patient, for each period has been attended with diminished pain and the patient is very glad the operation was performed. Another case gave indefinite results at first, but is now in greatly improved health and her dysmenorrhea is better. Both these cases are perfect results so far as the operation is concerned, because a No. 12 or 15 sound easily enters; but the patients must be cured of the "neurotic habit" before a full and complete recovery is secured.

Conclusions.—1. A large majority of cases of dysmenorrhea occur in neurasthenic or neurotic women, and operative treatment alone will not effect a cure.

2. Dysmenorrhea due to flexion is not cured by the use of the intrauterine stem, for at best the uterus is kept straight only while the stem is in position.

3. The practice of divulsing the uteri of virgins under 21 years of age, or before maturity and complete development of the organ, is generally to be condemned.

4. Dysmenorrhea due to actual obstruction or stenosis is rare, and if present we frequently find that one or more ineffective operations have been done.

5. Dudley's modification of Sims' operation appears to promise good results, as it insures a large cervical canal which cannot be closed by cicatricial contraction. But this operation is only indicated in cases of stricture (stenosis) of the canal, or else in those rare cases where an anteflexion of high degree prevents the escape of the menstrual flow.—*Am. Jour. of Obstetrics.*

SOCIETY REPORTS.

TORONTO CLINICAL SOCIETY.

Stated meeting, May 2nd, 1900.

ELECTION OF OFFICERS:—President, Dr. W. H. B. Aikins; vice-president, Dr. Geo. A. Peters; corresponding secretary, Dr. A. A. Small; recording secretary, Dr George Elliott; treasurer, Dr. W. H. Pepler: executive committee, Drs. Anderson, Hamilton, Dwyer, Silverthorn and Parsons.

TUBERCULAR TESTICLE, VAS DEFERENS AND VESICULA SEMINALIS REMOVED BY OPERATION.

GONNORHOEAL VESICULA SEMINALIS REMOVED BY OPERATION.

Dr. George A. Peters presented these specimens, described the conditions present, the operations and the results. From the first patient was exhibited a testicle, a vesicula seminalis and corresponding vas deferens; from the other both vesiculae seminales. The first was undoubtedly tubercular; the second not tubercular. In the second, the man denied the history of gonorrhoea, although no other source of the condition could be deduced. The surgeon described the symptoms present, the difficulties of the operation and the final results, which were good in both cases.

TRAUMATIC ORIGIN OF CANCER.—Dr. Wm. Britton introduced this subject. Between two and three years ago, a commercial traveller was returning to his home in this city, carrying in either hand a heavy valise. As he was nearing his house he slipped, but recovered himself before falling to the ground. He entered his house suffering from a certain amount of shock and declined to partake of any supper. He stayed at home a few days and returned to his business but did not feel himself. Early in January (he was injured about the middle of December), he started for a trip to the Maritime provinces. He returned about the middle of February and consulted a physician of this city. An exploratory incision was deemed advisable, and it was then found that the man was suffering from extensive cancer of the liver. The incision was closed and in a few days thereafter the man died. He carried an accident insurance policy for $5,000, and the Company declining to pay the policy, action was brought to recover the same. The case excited considerable interest amongst the medical men retained to give expert evidence. Dr. Britton stated he had come to a decided conclusion that the injury did not cause the cancer, but the others on the other side were just as positive that the injury did cause the cancer. Dr. Britton discussed at considerable length the causes of cancer of the liver and the bearing this accident had on the disease of this case.

Dr. H. B. Anderson, who performed the post mortem examination, stated that he found a solitary mass in the head of the pancreas, and innumerable nodules throughout the liver. The only part of the liver free form the disease was that part of the organ most closely in relationship

to the surface where the alleged injury was said to occur. Dr. Anderson stated that instances of primary cancer in the liver were exceedingly rare, though he had seen one case; and if it were likely to be due to injury, one would expect primary cancer of the liver to be more frequent, as the liver is an organ exposed to injury. He thought the likelihood of cancer of the head of the pancreas being due to injury was exceedingly limited; and in this case the fact that the part of the liver in direct relation to the site of the injury, was entirely free from any disease, precluded the possibility of the disease being here due to traumatism.

From the point of view of a pathologist the case presented no difficulties, and in the post mortem room, no one would question its being an ordinary case of primary cancer in the head of the pancreas with secondary nodules in the liver.

Dr. George A. Peters discussed the case from the other standpoint, and showed how a lawyer might be able to pin the medical expert down to traumatism as a cause of the condition present. From a clinical standpoint he did not doubt that the case was one of primary cancer of the head of the pancreas with secondary nodules in the liver, and that the condition was present at the time of the injury, but from a medico-legal standpoint doubt could be thrown on this view.

Dr. Nattress, the medical referee of the Insurance Company gave the precise dates of the injury, medical attendance, operation and death. He also stated that a provincial physician had diagnosed the man's condition as one of cancer of the liver months before the supposed injury.

Dr. Theo. Coleman read general observations upon the origin of cancer and the present day theories of the cause of the disease.

The result of the case was a non-suit.

VOTE OF THANKS.—Dr. George A. Peters moved, seconded by Dr Herbert Bruce, that the retiring president be accorded a hearty vote of thanks for his efficient services during the past year.

Dr. W. Britton in the chair, presented this to Dr. Bingham, who made a suitable reply in acknowledgement.

One of the most successful years in the history of the Society closed with the usual refreshments.

GEORGE ELLIOTT,
Recording Secretary.

CASE REPORTS.

A CASE OF ACUTE MORBUS COXAE MASKED BY COEXISTING ACUTE ARTICULAR RHEUMATISM.

By James Gow, M.B., Intern Physician, Hospital for Sick Children.

On Wednesday March 6th, Wesley H., a lad of 8 years was brought to the out door department of the Hospital for Sick Children, for treatment. He complained of acute pain in left knee.

He was seen and examined by the physician in charge who made a diagnosis of acute rheumatism and ordered him to be admitted to the wards. He was placed under the care of Dr. J. T. Fotheringham, and the case treated as one of acute rheumatism.

The history as obtained is as follows :

The child was convalescing nicely from an attack of measles when on Monday the 4th he got his feet wet That evening his left knee became greatly swollen and inflamed, rendering walking or any movement at the joint impossible. He remained in bed the next day and on Wednesday no improvement being noticed he was brought to the Hospital.

The knee on examination seemed slightly swollen, was not reddened specially, was very painful and hotter than its fellow of the opposite side ; no other joints were involved.

The general examination revealed nothing abnormal except a blowing murmur systolic in rhythm, heard over the mitral area, and at apex of heart and transmitted towards left axilla. This was thought to be the result of an old endocarditis. Two days after admission patient's right ankle became affected and presented much the same signs and symptoms as left knee. Several days later the right hip also became involved.

The temperature in the early stages was very greatly elevated and on the 9th inst reached 105° F. The evening temperature was always 2° to 3° above that of the morning. Nocturnal delirium and great irritability were specially well marked features.

Under treatment the condition slowly improved and on the 16th inst. temperature reached normal. It did not remain so however but again rose, and remained about 99° in morning and 102°–3° in afternoon. Pain localized especially to the left knee also remained.

From the septic looking chart it was thought that some other trouble besides Rheumatism must be present, probably osteomyelitis, and as the boy was extremely intolerant of manipulation, an examination under chloroform was deemed advisable.

On March 25th an anaesthetic was administered and an examination of all the joints was made by Dr. G. A. Bingham, at Dr. Fotheringham's request. It was found that the left hip was held very rigidly by the muscles surrounding the joint and no movement was allowed at all. All the other joints seemed to have cleared up nicely. The trouble in the hip was thought to be tubercular, and treatment suitable for the relief of this condition was at once begun. Absolute rest in bed was enforced and 5 lb. extension was applied to leg.

A very striking change followed.- In about twenty-four hours the pain disappeared, temperature fell to normal and the great irritability which had especially marked the case was no longer present.

From the history the case is undoubtedly one in which patient suffered from a double onset of acute attack of rheumatism and tuberculous hip and is very interesting on that account. The endocarditis suggests at least a previous attack of rheumatism and the trouble in right hip and ankle and signs of acute trouble in left knee are I think inexplicable unless the idea of an attack of Rheumatism is entertained.

The diagnosis of hip disease was only made after recourse had been had to an anaesthetic—the marked irritability and pain rendering an examination which necessitated movements of the joints impossible.

Exhaustive enquiries as to previous signs of hip trouble were negative—and no history of tuberculosis in the family could be obtained -The following special features may be noted.

1.—The onset of two totally different acute diseases at the same time.

2.—The great value of an anaesthetic to confirm or aid diagnosis.

3.—The wonderful abatement in symptoms following proper treatment.

The Canada Lancet

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EDITORIAL.

OXYGEN INHALATION AS A THERAPEUTIC AGENT.

The recent prevalence of a serious type of pneumonia in the community has brought this subject prominently before the profession, and at the last meeting of the Toronto Medical Society a discussion took place in reference to the value of oxygen as a remedial agent. The consensus of opinion of the members present, based on their experience of its use went to show that in properly selected cases, the inhalation of pure oxygen gas was a valuable adjunct to the usual measures adopted in treatment.

Dr. A. H. Smith, of New York, in 1860, was the first to direct the attention of the profession in this country to the value of oxygen in practical therapeutics, and since that time it has been used to a considerable extent, especially in the treatment of pulmonary diseases, attended by dyspnoea. Dr. Smith showed experimentally that the inhalation of even pure oxygen was quite harmless, and that by increasing the proportion of the gas in the inspired air, animals could be kept alive indefinitely with degrees of tracheal obstruction that would have proved immediately fatal if ordinary air alone were used. These experiments suggested the conditions

in which oxygen has its greatest therapeutic value, viz., where there is interference with the *entrance* of air to the lungs, the pulmonary alveoli, and consequently the respiratory surface remaining normal. As he points out, ordinary respiration requires that a normal amount of oxygen be brought in contact with a normal quantity of blood. If a partial obstruction lessens the amount of air entering the lungs, this deficiency can be remedied by a corresponding increase in the proportion of oxygen in the air inspired. Where there is consolidation of pulmonary tissue and a consequent lessening of the respiratory surface, however, the conditions are entirely different. The blood will only take up a certain proportion of oxygen, so when the quantity of blood exposed to the air in the alveoli is lessened, as in pneumonia, this cannot be compensated for by supplying a greater amount of oxygen to the healthy portions of the lungs. As Dr. Smith says "we possess the means of remedying to a certain extent a deficiency of air, since we can make a reduced volume contain the full amount of oxygen. But we have no power to act in a corresponding way upon the blood, for it cannot be made to take up an excess of oxygen in one part to compensate for a deficiency in another."

The practical application of these considerations to the treatment of disease shows that they are well borne out by clinical results. In the dyspnoea of membranous croup, resulting from obstruction, oxygen inhalations act promptly and efficiently. The same is true of bronchitis, where the obstruction in the larger or smaller tubes is not complete, and the alveoli are normal. In croupous pneumonia and more especially in broncho-pneumonia, a certain amount of benefit will be derived from the fact that in addition to the actual consolidation, there is always a considerable amount of bronchitis and oedema in other portions of the lungs. But in these diseases the chief value of oxygen is said to be that by arterializing the blood in the unconsolidated portions, it facilitates the sluggish circulation, relieves the embarrassment of the right heart and thus obviates a common cause of death from asystole. For these reasons, in severe cases it should be resorted to early, before marked interference with the pulmonary circulation occurs, as little benefit can be expected with a failing circulation. The dyspnoea of spasmodic asthma is often greatly relieved by the inhalation of oxygen, and it is obviously indicated in cases of emphysema, chloroform narcosis, and asphyxia from different causes, as well as in diseases characterized by deficient oxidation and consequent fatty degenerations in different organs of the body, as in the various forms of anaemia, leukaemia, and pulmonary tuberculosis.

There seems little rational explanation for its employment in cases of diabetes, uraemia, gastralgia, dyspepsia, etc., though some claim to have

seen benefit follow its use. While oxygen is by no means the cure-all in disease that it has frequently been vaunted as being, still it must be considered in many cases to meet urgent indications in treatment.

ANTI-VACCINATION IN ONTARIO.

During the smallpox scare in Toronto a short time ago, as the result of the outbreak of the disease in different parts of the Province, wholesale vaccination of school children and others was resorted to at the public expense. The mayor, according to reports in the public press, at a meeting of the city council, took exception to the account for vaccine, and gave vent to a tirade against compulsory vaccination, expressing the hope that the obligatory laws enforcing it would soon be repealed. It is unfortunate that persons holding prominent public positions should not have sufficient good sense to keep silence in reference to matters about which they know nothing, but it would too often appear that the greater the lack of knowledge of the subject in question the more violent and positive are the statements made concerning it. Worthless as such opinions are in influencing those who know, they still have their ill effect in stirring up the unreasoning opposition of the ignorant, so that much harm often results.

A few weeks later a deputation consisting of a few homœpaths, a woman physician and some other ladies, waited on the Provincial Government to urge the repeal of the present vaccination laws. Here again, froth and violence of language took the place of argument and reason. With ignorance that would discredit a Kaffir they denounced vaccination as "the most colossal medical delusion in the history of the world." It is particularly edifying to see our homœpathic brethren abandoning their doctrine "similia similibus curantur," and refusing to accept the one crumb from rational medicine from which they might be expected to gain some comfort. The Premier listened to their arguments, and promised to take the matter into the limbo of his serious consideration, where, no doubt, like many another ill-considered petition, it will long remain in safe confinement, to the credit of his wisdom and the safety of the community. The beneficient results in the saving of life and suffering which have followed the discovery of the immortal Jenner are too well known to the intelligent public to allow them to countenance any such retrograde action as that proposed to the Government by this deputation. Were it not for the dire effects that would be visited on the innocent, however, it almost seems a pity that these individuals who wish to escape vaccination might not be allowed their will, that evolution might exert her untrammelled influence of selection. The anti-vaccination crusade would then work its own cure in due time.

CARE OF PAUPER INEBRIATES.

The treatment of pauper inebriates is exercising the minds of certain committees, appointed by the leading medical associations of the Dominion for the purpose of considering the best means to adopt in making an attempt to enlist the sympathy and gain the support of the Provincial Governments in satisfactorily dealing with this unfortunate class of the community.

Dr. Rosebrugh of Toronto has given much time and thought to the matter and working with representatives of the Prisoners' Aid Association and members of the committees above mentioned, he has framed a bill which during the past few months has been on several occasions placed before the Government of Ontario. They, of course, considered the matter, perhaps are at present considering it, and without doubt will continue to consider it for a long time, unless some such pressure is brought to bear upon them as to make them realize that the enactment of such legislation will prolong the life of the Government.

It is to be hoped that some means will be taken to help this unfortunate class, thus not only saving to the State many good citizens, but also a large expenditure of money required for their management. Although the scheme is new in Ontario, it is not an experiment, for it is resulting in the reclaiming of a large percentage of patients both in England and the United States where it has been tried.

D. G. G.

THE CANADIAN ARMY MEDICAL SERVICE.

The promised organization has been authorized and inaugurated by recent General Orders, and we are glad to welcome this most necessary addition to the offensive-defensive resources of the Dominion. The authorized strength of five Bearer Companies and four Field Hospitals is of course quite short of actual requirements, and will probably be soon increased. For the defence of certain strategical centres existing civil medical and surgical facilities could be utilized, and the newly created units be employed, till more are organized, in the more active duties of offensive-defensive operations in which mobility is an essential. The list of commissions in the A. M. S., published elsewhere in this issue, when compared with the Militia list, shows that seniority in rank has been respected, juniors having been in only one or two instances given steps over seniors who had elected to leave the regimental service for the staff. There is no evidence of political favouritism in the appointments, which

seem to have been made strictly departmentally. We are glad to be able to express this opinion, as charges of favouritism have been rather freely made of late in connection with the Department of Militia and Defence.

The distribution of the units at present is as follows:—

Bearer Companies.

No. 1 Company	Halifax, N.S.
" 2 "	Ottawa, Ont.
" 3 "	Montreal, Que.
" 4 "	Toronto, Ont.
" 5 "	Quebec, Que.

Field Hospitals.

No. 2 Company	Kingston, Ont.
" 3 "	Montreal, Que.
" 4 "	Toronto, Ont.
" 5 "	Quebec, Que.

We may suppose that in the further organization contemplated, Hamilton, London, Winnipeg and Vancouver, are likely to be made headquarters for similar units, with others in St. John, N.B., or Halifax, N.S.

One great advantage likely to be derived from such units is that as they will be recruited at least in part from the medical students in the various centres, there will in time be available as Medical Officers for the regiments throughout the country men who will have had more specific military training than has in the past been possible for the average regimental Medical Officer For it is a truism to say that every man who wears a uniform must be first of all a soldier, no matter what his technical duties may be in addition, in the various Departments of the Service, Pay, Engineers, Service Corps, Ordnance Dept., or what not. And admirably as the Militia have been served in the past and are now being served by their Medical Officers, we must admit that from the purely military side, improvement is to some extent possible in the case of a few at least of those who have held commissions as M. O's.

The reflex effect of this organization will probably show itself, or could be made to do so, in an increased interest on the part of the taxpayer in the Militia. Time was when the Service was looked on as disreputable, by many a decent member of the *bourgeoisie*. This has largely disappeared, the *morale* of the entire force has risen greatly, and the great influence of the medical profession upon public opinion will be more likely than ever to be exercised in favour of the purely volunteer, and in the technical sense "irregular," force which we in Canada have, all that we ever can have, and which therefore it is the duty of every good citizen to upport in every possible way.

EDITORIAL NOTES

CANADIAN ARMY MEDICAL STAFF.

By a general order issued by the Department of Militia on April 30th, the following commissions have been allotted :

To be lieutenant-colonels.—Lieut.-Col. J. H. L. Neilson, Surgeon-Lieut.-Cols. C. C. Sewell, from the R.C.A.; A. Codd, from the R.C.D; G. S. Ryerson, Lieut.-Col. W. Tobin, from the unattached.

To be majors.—Majors A. Worthington, A. D. Osborne, C. W. Wilson, W. Nattrass, H. S. Birkett, E. E. King, C. V. Belton, J. D. Brousseau, E. Fiset, from the unattached list; Major C. C. Jones, Surgeon-Lieut. J. T. Fotheringham, from the 2nd Battalion. The following on probation, not yet qualified :—Major J. E. March, from the unattached list; Surgeon-Major J. H. Bell, from the retired list; Major C. E. Elliott, J. W. Bridges, E. B. Echlin, R. H. Abbott, from the unattached list.

To be captains on probation.—Surgeon-Lieuts. J. A. Sponagle, from the 69th Battalion; S. D. Johnson, from the 82nd Battalion; M. McLaren, from the 62nd Battalion; H. J. Harrison, from the 59th Battallion; G. S. Rennie, from the 13th Battalion; G. H. Parke, from the 8th Battalion; A. N. Hayes, from the 27th Battalion; H. A. Archambault, from the 65th Battalion: A. Y. Scott (late 2nd Battalion).

To be lieutenants.—Lieut. J. A. Devine, from the unattached list. The following on probation, not yet qualified :—J. Herald, O. L. Berdan, A. A. Shaffer, H. B. Anderson, W. W. Thompson, R. F. Preston, D. A. Stewart, J. A. P. McCabe, L. R. Murray, H. P. Fleming, from the unattached list; J. A. Ross, A.M.S.; R. Ovens, K. Cameron, J. H. Cormack, W. I. Senkler, from the unattached list; 2nd Lieut. E. D. Farrell, A.M.S., Lieut. E. F. Gorrell, from the reserve of officers; J. T. Clarke, H. A. Bruce, F. Fenton, J. M. Cotton, A. T. Shillington.

To be second lieutenants (supernumerary).—Lieuts. A. A. McCrimmon, H. H. Sinclair, from the unattached list; Dr. J. O. Orr, Dr. D. W. McPherson, H. J. Hamilton, C. A. Hodgetts, G. G. Turcott, J. A. Roberts, L. Drum, D. E. Mundell, G. S. Cameron.

The following officers are allotted to medical corps units :

Bearer companies.—No. 2 Company, officer commanding, Major E. B. Echlin; No. 3 Company, officer commanding, Major H. S. Birkett; No. 4 Company, officer commanding, Major J. T. Fotheringham; No. 5 Company, officer commanding, Captain G. H. Parke.

Field hospitals.—No. 2 Company, officer commanding, Major R. H. Abbott: No. 3 Company, officer commanding, Major C. W. Wilson, No. 4 Company, officer commanding, Captain A. Y. Scott; No. 5 Company, officer commanding, Major C. E. Elliott.

We understand that the recruiting to the strength of the peace footing has already begun in No. 4 Field Hospital and No. 4 Bearer Company (Toronto), so that these units will be ready to go to the camp of instruction at Niagara in June.

Trinity Medical College.

The following candidates have passed the final fellowship examinations in Trinity Medical College:—F. C. Trebilcock, 383 marks out of 450, gold medal; C. L. Taylor, 366 marks, first silver medal: J. W. Fitzgerald, 365 marks.

The following receive certificates of honor:—F. W. Marlowe and R. E. Stanley Ryerson.

The following have received seventy per cent. and upwards:—First-class honors—J. A. Newsome, J. C. Grosjean.

The following have made sixty per cent. and upwards:—Second class honors—W. H. Rennie, G. B. Jamieson, H. P. Ross, T. A. Addy, J. G. Adam, A. R. Perry, E. A. Boyd, L. B. Ashton, W. J. Boynton, W. A. McIntosh, E. O. McDonald, J. T. Elliott.

The following have passed:—E. G. Rawlinson, J. J. Walker, J. Chapple, E. K. Langrill, J. A. McClintock, J. M. Sinclair, H. Softley, A. L. Marks, J. A. Kennedy, C. W. Brand, C. E. Coke, D. C. Wilson.

Following are the names of those who have passed in the third year examinations:—A. F. Anderson, T. B. Allen, T. W. Allison, L. B. Ashton, J. B. Buell, W. C. Becker, W. T. Brown, A. E. Cantelon, T. H. Crawford, J. B. Coleridge, C. R. Elliott, F. H. Ferguson, N. H. Ferguson, J. H. Foster, C. C. Grant, R. Harrington, J. Herod, G. B. Hoops, S. Johnston, R. N. Kyles, W. H. M. Kyles, C. I. Levy, D. R. Landesborough, C. P. Lusk, J. D. Lyness, J. Moore, W. H. Marshall, H. N. MacKechnie, A. C. Malcolmson, J. W. McCormick, R. Parsons, H. C. P. Rundle, A. E. Ranney, F. T. Stainer, A. J. Schilstra, A. P. Stirrett, J. R. Thompson, R. Turnbull, A. F. Wright, R. C. Thompson, C. E. Watson, R. L. King, G. H. Burleigh, T. M. Davey, J. T. Elliott, S. J. Farrell, J. C. Grosjean, H. H. Hutchinson, L. E. W. Irving, J. A. Kennedy, E. R. Langrill, R. S. MacKechnie, W. A. McIntosh, A. R. Parry, J. M. Sinclair, C. L. Taylor, J. T. Wright.

The Silver Salts in the Treatment of Chronic Suppuration of the Middle Ear.

Gleason (*Laryngoscope*, March, 1900,) points out that the use of the silver salts in his treatment of otorrhoea has not been markedly successful, the irritating effects of the solution having overshadowed the antiseptic and astringent properties of the silver and rendered the progress slow, and where an astringent was needed diluted alcohol rendered better service.

Argonin and protargol (5 % solution) have of late been used by the writer with good effect. They have been used with a hypodermic needle and a Blake's cannudla, and injected as far up into the attic as possible. This was followed up by massage with Siegle's pneumatic speculum, in order if possible to force a portion of the solution into more distant parts than could be reached with the syringe.

Surgery of the Tonsil.

Under this Captain Noland (*New Albany Med. Jour.* Jan., 1900, states that the atrophied tonsil is deleterious by reason of the pressure of infection retaining follicles filled by dried, decomposing secretions. The absorption of this infectious material into the circulation is a common cause of pains formerly called growing pains. Such follicles should be cleansed, split open, and the ragged edges trimmed off.—*Laryngoscope.*

WISHART.

The McKay Bill.

Pending the promise of Premier Ross that a Bill would be introduced into the Legislature next session dealing with many points in the organization of the Provincial University, Dr. McKay withdrew the Bill introduced by him in reference to relation of existing medical teaching bodies to that institution. A committee of the Senate of the University has been appointed to consider the whole matter, so that a satisfactory solution is hoped for.

Professor Delstauche.

The death on the 27th Jan'y last of the distinguished otologist is greatly to be regretted. He was born in Brussels in 1840 and was the second son of Dr. Felix Delstauche, the first otologist in Belgium.

Educated at Bologna, he began practice in Brussels in 1865, and was medical officer of its poorest district during the terrible epidemic of cholera of 1866, exhibiting the greatest devotion. In 1871 he opened the first special clinic for diseases of the ear and nose in the hospital for poor children. Later he served in the Belgian Red Cross Ambulance in the Franco-German war. A brilliant thesis on tinnitus aurium in 1872 made

him an *agrégé* of the University of Brussels. At the otological congress held in London last year he was awarded unanimously the Lensal prize, as a testimony to the value to the suffering deaf of his numerous ototherapeutical inventions.

WISHART.

Clinical Society Dinner.

About forty members of the Toronto Clinical Society attended the annual dinner at the Albany Club on Wednesday evening, April 18th, when a very enjoyable time was spent.

PERSONAL.

Dr. Thos. C. Cullen (Tor. 90) has been appointed associate professor of Gynaecology in The Johns Hopkins University. Dr. Cullen recently refused a call to the professorship of Gynaecology in Yale.

Dr. G. R. McDonagh has returned to Toronto after an extended European tour.

Dr. A. H. Wright and Dr. N. A. Powell have recently spent a two weeks holiday in Atlantic City.

Dr. Charles Sheard, Toronto's efficient medical health officer, has returned from a well earned holiday in New York.

Dr. Colin A. Campbell (Trinity '98), of the house staff of the Toronto General Hospital, has been appointed surgeon to the S. S. Tartar, of the Canadian Pacific line from Vancouver to Yokohama. Dr. Campbell left Toronto on Tuesday to assume his duties.

Dr. Paul A. Gillespie, a graduate of Toronto University, who, previous to the outbreak of the British-Boer war was practising at Winburg, Orange Free State, has recently written home of his experiences. He was commandeered for service in the Boer ambulance corps, and was sent to look after their wounded in Boshof just before that place was taken possession of by Lord Methuen's force. Much to his satisfaction, Dr. Gillespie is now in the British Army medical service.

Lieut. Colonel G. Sterling Ryerson, Canadian Red Cross Commissioner in South Africa, has been appointed British Red Cross Commissioner with Lord Roberts headquarters.

Dr. Walter P. Thompson, formerly of Waubashene, has disposed of his practice to Dr. Frank Porter, and has opened an office in Toronto at 6 Carlton St.

Dr. A. P. Chalmers, (Trinity '92) of Oil Springs, who has been very ill as the result of an infection received while performing an operation, is well on the way to recovery again.

We are pleased to know that Dr. Arthur Jukes Johnson, of Bloor St., is recovering from the illness which has confined him to the house for the past two weeks.

Dr. W. Doan, Harrietsville, sailed for England on the S. S. Parisian on May 12th, where he will spend the summer doing post graduate work.

Dr. W. J. Greig, of Toronto, is taking a post graduate course at the John's Hopkins Hospital.

Dr. St. Jean, formerly Liberal Member of Parliament for Ottawa, died at his home last week after a short illness.

BOOK REVIEWS.

THE ANATOMY OF THE BRAIN.

A Text-book for Medical Students. By Richard H. Whitehead, M D. Professor of Anatomy in the University of North Carolina. Illustrated with Forty-one Engravings. 6 1-4 by 9 1-2 inches. Pages, v—96. Extra Vellum Cloth, $1.00, net. The F. A. Davis Co., Publishers, 1914-16 Cherry St., Philadelphia, Pa.

The author's aim to furnish students with a clear, accurate and concise account of the anatomy of the brain has been well carried out in this little book. The plates are numerous and well chosen and the press work is very satisfactory. The subject is treated of in four chapters as follows:—

The divisions of the encephalon; the surface anatomy of the encephalon; the internal anatomy of the encephalon and the conducting paths of the encephalon.

DISEASES OF CHILDREN.

By George M. Tuttle, M.D.

This little treatise certainly covers a large amount of ground and the author is right in claiming that it contains but a skeleton of the subject. We cannot very heartily advise its perusal either for student or practitioner, for it is so superficial that its use and that of kindred works is not of the sort to impress upon the reader more than a skimming of the cream—and nothing solid will remain.

If a practitioner wishes to do his duty by his patient he should have, for reference, that class of work which deals with the whole subject from inspection to treatment—and should not content himself with a mere sketch of the disease, which, by reason of its too great brevity, will often omit the classical, or more frequently found symptoms. We would call attention to the author's treatment of pleurisy with effusion as one instance of this dangerous superficiality. Four and a half lines are given to the whole subject. Surely this sample will suffice to bear out our meaning when we say that it is too exaggerated an example of the "multum in parvo" to be useful.—A. B.

LEA'S SERIES OF POCKET TEXT-BOOKS.

Edited by Bern B. Gallaudet, M.D. Crockett's Gynecology. A Pocket Text-Book of Diseases of Women, by Montgomery A. Crockett, A.B., M.D., Adjunct Professor of Obstetrics and Clinical Gynecology, Medical Department of the University of Buffalo, N. Y. In one handsome 12mo. volume of 368 pages, with 107 illustrations. Cloth, $1.50, net. Flexible red leather, $2.00, net. Lea Brothers & Co., Philadelphia and New York. February, 1900.

This text-book by Montgomery A. Crockett, M.D., of Buffalo, and Bern B. Gallaudet, M.D., of New York, should be of great value especially to students. It is concise and shows clearly the hand of a clinical teacher. The paragraphing and tabulating are excellent. It is characterized by an absence of padding as well as by an absence of the many pages of histories and reprint so frequently found in text-books. All this makes the book a valuable one to a student and of great assistance to him in getting up the subject. The teaching is on the whole reliable. The authors however in their attempt to condense and make the subject easy for the student have detracted from its scientific value and made it of less use to the practitioner, as for example in the chapter on "Menstruation and its Diseases." Amenorrhœa, dysmenorrhœa, menorrhagia and metrorrhagia are treated as separate diseases rather than as symptoms. That the book is a student's book is also made apparent in the paragraphs describing operations. Operations are in some cases rather defined than described and while this is enough for the student it is not sufficiently minute for the operator.

The book is well gotten up. The diagrams are excellent and the press work good. There is certainly a great want filled by this publication.—D. G. G.

INJURIES OF THE EYE IN THEIR MEDICO-LEGAL ASPECT,

By S. Brandy, M. D., Prof. in Lille University, etc, France. English Edition revised and edited by Charles A. Oliver, A. M., M.D. Published by F. A. Davis Company, Philadelphia, New York, Chicago.

This monograph of 160 pages is written mainly for the eye specialist. It treats of the traumatic lesions of the eye and its adnexa, especially from a prognostic standpoint. It lays special stress on the differential diagnosis between recent and old or previous pathological changes, also simulated affections of the eye and how to detect them.

The last chapter is on Medico-Legal expert testimony, the legal portion of which was written by Prof. Jacquay of Lille, France, and translated and rewritten and adapted to the courts of the United States of America by Charles Sinkler, Esq., of the Philadelphia Bar.

This is a valuable hand book, written with care, concise and to the point.—Trow.

A SYSTEM OF MEDICINE.

By many Writers. Edited by Thomas Clifford Allbutt, M.A., M.D., L.L.D., F.R.C.P., F.R.S., F.L.S., F.S.A. Regius Professor of Physic in the University of Cambridge, etc. Vol. VI. The MacMillan Company, New York and London, 1899.

The volume is a series of most valuable monographs full of personal observation, well reported cases illustrative of the subject in hand, and reference to the most recent literature.

The first half of the work deals with diseases of the Vascular System, continued from Volume V—right sided valvular disease, angina pectoris, arterial degenerations, aneurism, thrombosis, embolism and disorders of the lymphatic system are considered.

Diseases of muscles occupy some 25 pages and the remainder of the 920 pages are devoted to diseases of the Nervous System.

With such names on the list of writers as Sir Douglas Powell, Pitt, Roberts, Welch, Mott, Rolleston, Beevor, Barlow, Horsley, Head and Rissien Russell, and others, further comment is hardly necessary. Some subjects are of greater interest than others, and appeal to one with greater force, and this may permit particular mention of some of the sections. That dealing with "The Arterial Degenerations," by Dr. Mott, with excellent illustrations and abundant references, is a most valuable contribution. This is equally true of Thrombosis and Embolism, by Dr. Wm. Welch; General Pathology of the Nervous System, by Dr. Bevan Lewis; Raynand's Disease, with excellent illustrations, by Dr. Barlow; Diseases of the vertebral column, by Professor Horsley; affections of the Spinal Meninges, by Dr. Risien Russell, and a most comprehensive section on Medical Ophthalmology by Dr. Brudenell Carter. The volume closes with complete indices as to name and subject. It is a work of unusual value. H.C.P.

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PUBLISHER'S DEPARTMENT.

CAUSES, DIAGNOSIS AND TREATMENT OF CYSTIT S.

In the Medical News of April 7th, 1900, appears a complete and comprehensive article with above title by Dr. Ramon Guiteras, a recognized authority on diseases of the genito-urinary tract. We reprint herewith portion of this paper on "Treatment of Cystitis due to Tuberculosis."

"In the treatment of tubercular cystitis, the practitioner encounters a condition that taxes all the resources at his command and he errs, as a rule, on the side of too much, rather than too little, treatment. In other words, it often happens that the more you treat the patient locally for his cystitis, the worse the condition becomes. It is, therefore, necessary to proceed cautiously in the treatment of this form of bladder inflammation, and, above all, is it important to improve the general condition of the patient as much as possible. If we were to treat patients suffering from tubercular cystit's along the same lines as pulmonary cases, namely, by sending them away to lead an open-air life under conditions that would improve their nutrition to the utmost, the condition would be much more rapidly improved or cured than by anything that could be done by the ablest specialist of the period.

Numerous remedies have been recommended by different authorities for the treatment of this form of cystitis, and naturally every practitioner who encounters this rebellious trouble grasps at anything that offers the probability of a cure. Guyon at one time advocated the use of intravesical injections of bichloride of mercury, 1 to 10,000, and since then many have been following his advice, but such a solution will rarely cure this disease, while it usually produces an irritation that is almost unbearable.

Nitrate of silver and permanganate of potassium have the same effect. Boric acid and boro-glycerine irritate less, but do not seem to possess the power to ameliorate the disease. Recently iodoforms injections have been advocated, and the precedure would seem to be founded on a logical basis. Three of four ounces of a five per cent. solution of iodoform in liquid vaseline are injected into the bladder every two or three days, the patient being instructed to watch the stream when he urinates and stop the flow just as soon as the oil appears. This forms a permanent iodoform dressing of the bladder-wall, and in the hands of some of the French surgeons is said to have met with gratifying results.

Personally, I have had better results with borolyptol in this class of cases than with any other remedy which I have employed. This seems to have a powerful germicidal effect, while the fact that it does not irritate the bladder renders it pleasant to the patient. It is used in the

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ORIGINAL COMMUNICATIONS.

GENERAL CYSTIC DEGENERATION OF THE KIDNEY.

H. C. PARSONS, B.A., M.D., L.R.C.P., M.R.C.S.

Professor of Pathology, Women's Medical College, Toronto.

This unusual specimen of cystic kidney was sent me by Dr. R. B. Nevitt, who had removed it from a woman 25 years of age. The history is briefly as follows:—Patient consulted Dr. Nevitt for a moveable tumour in the left side of the abdomen with intermittent pain in that region.

Family History.—Negative.

Personal History.—No serious illness. At age of 13 years fell upon an upturned chair and one of the legs appears to have entered the body by either vagina or rectum. She was laid up for some time under a doctor's care. Since that time there had been pain in the left side. Menstruated at 13 years, always regular but painful, lasting five or six days. The pain was referred to the back and region of the tumour.

In the left side of the abdomen is a mass, freely moveable upwards, downwards and slightly inward. The upper edge lies just above the anterior superior spine of the ilium, and this can be moved upward to beneath the costal margin. The lower margin decends deeply into the pelvis. The mass is dull on percussion, and surrounded by a zone of resonance, even below, along Poupart's ligament. The uterus is displaced to the right, but free from solid or cystic enlargement. At operation this kidney was removed. The patient died some days after, the result of an infection, but unfortunately no autopsy was permitted. I find later that the patient was conscious of the tumour about two years ago.

The organ measures 6 x 4½ x 3 inches, weight 1 lb. 5½ oz. The general outline is fairly well preserved. Surface is very irregular, the irregularity being caused by numerous rounded, smooth, fluctuating elevations scattered uniformly, and varying in size. The capsule is slightly thickened, but strips off readily, and beneath it is found a dense chocolate-colored renal tissue, studded everywhere with cysts, containing clear amber fluid, enclosed in a thin transparent wall. The largest is 1½ by 1

inch. On section the organ presents a honeycombed appearance. The stroma is reddish brown in color and very dense, and in the meshes are numerous smooth-walled cysts. From most of them a clear amber fluid escapes, while others contain a firm, amber-colored, jelly-like material which is retained in the cavities after section. These cysts are distributed throughout the organ, in cortex and medulla alike. They do not communicate. The size varies from $1\frac{1}{2}$ x 1 inch to something microscopic. The pelvis is small, the lining is velvety and white. There is a deposit of fat about it.

The cyst fluid collected from a single cyst is dark amber, clear, odourless, acid. Urea is present in small amount.

Heat.—Slight precipitate much increased with HNO_3.

HNO_3.—Abundant, curdy precipitate almost entirely dissolved on heating.

Under the microscope this precipitate shows urates and radiating figures of urate of soda.

Microscopically the sediment shows renal epithelium swollen and granular. Large compound granular cells. Cholestearine crystals in abundance. Large ovoid bodies like fat, but less refracting.

The fluid collected on section of the whole organ gave the same chemical reactions, sp. gr. 1012, and microscopically well marked renal epithelium; many caudate epithelial; few pus cells; red blood cells; many coarsely and finely granular cells and pus casts.

Histologically.—The cyst wall is made up of a fibrous portion (varying in thickness in different cases) lined by a layer of flattened epithelium. The fibrous layer is in relation with the stroma of renal tissue which also varies greatly, in some cases showing abundant new formation of connective tissue in varying stages of maturity, and in others a renal tissue not so much fibrosed as compressed. There appears to be a considerable quantity of secretive tissue remaining, but it is rarely normal. The tubules and glomeruli are either compressed (as before stated), or give evidence of increased pressure from within as shown by the flattened appearance of the epithelium, or dilation of the space. Many of Bowman's capsules are greatly distended and the vascular tuft forced to one side, while others show marked fibroid change in the capsule with contraction upon the tuft. In some tubules there are small dilatations occupied by masses of colloid material, and many of the dilated Bowman's capsules are filled with the same material. Coats considers these the starting point of the cysts.

In considering renal cysts in connection with this specimen, it is, I think, obvious that such conditions as hydatid and dermoid cysts may be set aside. Of the *simpler forms* there is the cyst of chronic interstitral nephritis, where we find in a small contracted kidney a varying number of cysts, usually small in size and with an almost constant distribution throughout the cortical area alone. These are universally looked upon as retention cysts, having their seat in the Bowman's capsules and the convoluted tubules.

There is then the *General Cystic Degeneration of the Kidney*, the *so-called Congenital Cystic Kidney*, where, in an enlarged organ, cysts

are found scattered throughout the cortex and medulla alike, and of varying size. To this class our specimen evidently belongs.

There is abundant evidence in literature that this disease is in many cases congenital. Fussell (Sajous' Annual) cites a case in which bilateral disease of this kind in the child formed an impediment to delivery, evisceration being necessary. And this is only one of many. *Ziegler* speaks of foetal cystic disease, saying that the child is born with them. Instances are also recorded of death in-utero or shortly after birth from the same disease. It is quite striking, also, how frequently other developmental defects such as Cleft Palate Talipes, Imperforate Anus, Hydrocephalus, Defective Bladder, Horse Shoe Kidney, etc., are found in association. While such facts justify the term Congental Cystic Kidney, too general an application of it may be questioned, in that there is a good reason to assume that the same changes may occur in the adult kidney. *Touche*—Cites case of woman, 75 years—dead of Pneumonia, with double cystic kidney. *Boquel*—Case 45 yrs., dead of apoplexy, with bilateral Cystic Kidney. In one series of 6 cases reported the ages ranged from 21 to 65 yrs., and in another series the average age was 45 years. It seems improbable that such were congenital. *Treeves* and *Coates* divide the cases into congenital and adult. *Newman* draws a distinct line between the Foetal and adult cases. *Allbutt* makes a like distinction. The only instance I can find where the condition seemingly developed under observation is one in the records of Richard Bright, dated 1835, and reported in the Sydenham Society's Transactions, 1860. Male 30 yrs., emaciated and weak, urine moderate in quantity, pale, acid, contained albumen. There was a history of Haematuria 2 years previously. In the left lumbar region there was a tumour mass recognized as an enlarged kidney. When seen some weeks later patient was suffering from painful micturition and passage of pink fibrinous coagula, urine 20 oz. in 24 hours. On examination of the abdomen a mass was found in the right lumbar region similar to that on the left. Patient died in Convulsions and Coma. At the autopsy the left kidney was found 10 times larger than normal; the right kidney 6 times larger than normal. The Pathological description is that of this form of cystic kidney described as a combination of the granulated and vesiculated conditions.

As to the formation of these cysts there is a variety of opinion, as follows:

(1) Purely retention cysts.

(2) Adenomatous formations.

(3) Part of a general tendency to cystic transformation, there being cysts also of Liver being Spleen and Pancreas.

(4) Developmental errors.

Upholding the first are:

Virchow, who says they are due to inflammatory occlusion and atrophy of the papillae.

Thorn considers Inflammation of the Substance of the Papillae extending from the calices, the obstructing cause.

Newman thinks them retention Cysts, arising in the Malpighian bodies and tubules, and says that associated cysts in the Liver and Spleen, etc., are rare enough to be accidental.

Naunyn and *Courlies* think them adenomatous.

In *Clifford Allbutt's* System of Medicine they are described as a pure degeneration within the tubules with dilatation, producing pressure upon, and atrophy of, the the tissues about. Associated cysts of the Liver and Spleen are considered important as a guide to the origin.

Loomis & Thompson consider it a general cystic metamorphosis of the renal tubules and Malpighian bodies with atrophy of renal tissue about.

Treeves says:—In the *infant* it is a degeneration of embryonal tissues. In the *adult* an adenomatous formation.

Coats regards them not as retention cysts, but as the result of a perverted secretion of the renal epithelium. They are obviously growing structures, he says. In the tubules he finds masses of colloid material which he looks upon as a perverted secretion of the cells: these accumulations produce dilatation of the tubules, and a continuance of such secretion results in the well formed cysts, which with their pressure effects, are seen in the surrounding tissue. He says "an origin such as this would be consistent with cystic disease in other organs."

An explanation from a developmental point of view is given by Shattuck, who thinks they result from a combination of the Mesonephros (Wolffian Body) and the Metanephros (Kidney proper), the cysts arising from the former in the substance of the latter.

Some General Points about general Cystic degeneration of the Kidney:—

(1) More frequent in males than females.
(2) Usually bilateral, always so in infants.
(3) Disease may be more advanced on one side than the other.
(4) Organ always enlarged, but retains its general outline well.
(5) Weight usually $\frac{2}{3}$ lbs. Hare's case 16 lbs. is an extreme case.
(6) Cysts are found in every part of the organ.

Of course the number and size of the cysts and the changes in the remaining kidney tissue will be in direct ratio to the stage of the disease. The Cyst walls have their membrana propria or fibrous portion, with a lining of flattened epithelium. The Pelvis is usually contracted and may be filled with or surrounded by fat.

The ureter is narrow, the vessels small.

The cysts do not communicate with each other, or with the pelvis.

The *cyst contents* may be fluid. viscid or solid. In *color*, vary from pale amber to purple or haemorrhagic.

The Cysts contain—Fat and ephithelium, Cholestearin, Uric Acid and some say triple phosphates. Urea is present.

This condition of kidney may give rise to no signs whatever during life. The most common, however, are those of chronic interstitial nephritis as shown by urinary examination and signs of cardiac hypertrophy. There may be haematuria; Coats reports a case in which there were recurring attacks during 18 years. Death is usually from uraemia.

A CASE OF CONCEALED HYDROCEPHALUS.

BY THEO. COLEMAN, B.A., M.B. TOR.; M.D.C.M., TRINITY.

The history of the patient, G. M. was briefly as follows:

The mother and father are alive, and healthy. The child G. M. was born at 8 months without the use of instruments. Mother had previously two miscarriages and since has had two healthy children at full term. There is no history of lues or tuberculosis. The child never had a rash nor sore eyes and was strong and bright up to seven years of age. About two years ago (1896) patient suffered from otitis media, without complaining of any pain. His right ear has discharged ever since. Was always nervous but bright for his years. He was circumcised and the nervousness improved for a time but returned. The parents noticed that his speech became thick, then the eyesight began to fail, and with this there was a lack of co-ordination in the legs, his ankles turned over, he stumbled and was unable to come down stairs without holding on to something. He now took to screaming and shouting so loudly and persistently that he could not be quieted and the parents were obliged to leave the neighborhood and move into different houses. Gradually his power of locomotion gave out so that finally he was unable to walk at all. In the morning his mother would bring him down and sit him on a low box where he would sit all day without attempting to move. Sometimes with his head between his hands like a melancholic; sometimes he would lean to the right and draw up the right leg. On other days he would keep up a ceaseless motion of his hands and head and make inarticulate noises. The inco-ordination spread to the arms, more power being retained in the left than right arm. He was unable to feed himself, and could only convey a crust to his mouth when very hungry; liquids ran from his mouth but this was not from any paralysis but probably from a disinclination to swallow.

He was admitted to the Children's Hospital when the following history was taken:—Patient lies in a stupid condition, is quite blind, does not answer questions, voids his urine in the bed, is constipated, eats fairly well, does not vomit, and is very irritable; legs are drawn up, cannot stand, sensations normal as far as can be made out. Patient can move both arms and legs. No facial paralysis, pupils moderately dilated, do not react to light. Patient is an imbecile, makes some inarticulate noises. Hearing seems very acute but does not respond or show any intelligence when questioned. Dr. Macallum examined the optic discs and reported:—Discs pale bluish-white, vessels seem narrowed. No optic atrophy. Right ear has a purulent discharge, small in amount and foul, perforation in inferior quadrant, left ear. Left tympanum retracted, no sign of discharge. Dr. Peters proposed an exploratory operation, and the head, after careful preparation was trephined over the motor area on the right side. When the button was removed, no bulging of the membranes occured and nothing abnormal being seen the Dura was not opened, the button being and the wound closed. The wound healed by first intention.

The patient was discharged, the condition being unimproved. The legs were markedly flexed and drawn up, hands tremble a great deal and patient screams at night. He was admitted to the Home for Incurable Children, 138 Avenue Road, in November, 1899, where I first saw him. His physical condition had become worse, being absolutely helpless. His eyes open and staring. palpebral fissures equal, pupils equal and moderately dilated. No ptosis, lateral nystagmus. The expression is vacant. Can move his hands and legs but they are not volitional movements. Keeps his fingers in his mouth, and when taken out, it takes him some little time to get them back. There is a slight tremor as the hands begin to move. Eats a fair amount of soft food, does not like cold food, even the drinking water must be hot. Starts at sudden noises, knee jerks exaggerated, the whole leg going into clonus on touching the sole, and though he could draw his legs up and down still he was not able to withdraw the foot when tickled. He was very constipated.

A curious thing was his appreciation of music. He would laugh immoderately at hearing children sing. When he was bathed, his head had to be supported as it lopped back. About three days before he died the temperature rose to 102°, and he refused to swallow food. He died quietly without any convulsions.

Until the autopsy was performed the diagnosis had been in favor of some form of cerebral tumor, but the autopsy revealed an internal and external hydrocephalus.

Post Mortem Report by Dr. Harold Parsons.—

Case of Gordon Mackenzie aged 7 years, Home for Incurable Children. P.M. 36 hours after death.

Body fairly well nourished and well formed. Slight eczema of penis and scrotum. Thorax: pleural and pericardial cavities normal. Heart and lungs show nothing abnormal. Abdominal cavity negative. No excess of fluid. Abdominal organs negative, with the exception of urinary bladder the wall of which is slightly thickened. Mucous membrane velvety, with some haemorrhagic points. The contained urine is very cloudy and ammonical. Skull cap of normal thickness. Old trephine wound over motor area, button partly absorbed. On removing the skull cap the membrances were torn, and there was an abundant escape of clear pale amber fluid. This continued after cap was removed. The dura mater appears normal. The arachnoid is raised by an accummulation of fluid in the subarachnoid space. No fibrin is found any where. Coverslip preparations from the fluid are negative for organisms. While removing the brain the fluid still escaped, and the posterior portion of the brain which was supported by the hand was felt and seen to collapse as the fluid escaped. After removal, the occipital lobes formed a concavity rather than a convexity. On longitudinal section of the hemisphere the lateral ventricles are found greatly dilated, their total length is much increased, but more at the expense of the posterior than anterior lobes. The brain substance posteriorly and laterally is much reduced in thickness. The tempora-sphenoidal lobes are also encroached upon but to a less extent. The foramina are free. The central canal of the cord is not dilated. No evidence of pressure or occlusion at the transverse fissure.

In looking over the literature the symptoms seem most plain (Osler, page 1028, last edition.) Hydrocephalus was very little known till Dr. Wyeth published observations on dropsy of the brain in 1768. This writer says, "We are lead to suspect some deeply seated evil from the frantic screams and complaints of head and belly, alternating with stupor or rather lowness and unwillingness to be aroused."

The stupor is still interrupted by exclamations or shrill piercing screams while the tremulous hands of the little sufferer are incessantly engaged in picking his nose or mouth. Dr. Cheyne describes 3 stages. 1st. Increased sensibility, where each stimulus produces an inordinate response. 2nd. stage of diminished sensibility, child not easily aroused, pupils dilated, pulse slow; he is lethargic and with obstinately costive bowels. 3rd. stage palsy and convulsions, squinting, rolling of the head, stupor, convulsions, rapid thready pulse.

Dr. Wests analysis of 40 cases of Acute Hydrocephalus.

5 cases under one year.
9 cases under three years.
20 cases between three and six years.
5 cases between six and nine years.
1 case between ten and eleven years.

In Holmes Surgery, paracentesis capitis is advised, and since then many have tried with the aid of aseptic surgery to accomplished a cure but with uniformly bad results. Tapping in the region of the lumbar vertebrae has relieved some cases of external hydrocephalus, but I was unable to find any record of the patient having grown up a useful citizen.

CEREBELLAR TUMOR WITH DOUBLE OPTIC NEURITIS.

BY J. T. DUNCAN, M.B., M.D., C.M.

Opthalmologist to the Western Hospital, etc.

F. F., aged 22. In infancy the patient showed prominence of the left eye and convergent strabismus in the right. The patient was apparently healthy until two years ago, when he showed an unsteady gait, had difficulty in walking and in riding his bicycle from which he has frequently fallen. The unsteadiness of gait gradually increased and about a year ago, he began to lose his sight and hearing. He was ordered glasses for his deficient sight, but without much improvement. Up to last August, however, he was still able to attend to his duties in a newspaper office. Then he went to Virginia, U. S., where he consulted a specialist who diagnosed "eye strain." He remained in Virginia about 5 months, during which time his sight and hearing got worse. He returned to Toronto in January of this year.

In the early part of February he was brought to my office when the following observations were made:—

Family history—good. Present condition—pulse rather weak, respiration and temperature normal. Eyes—left proptosed (prominent), both show slow nystagmoid movements. Pupils—unequal, left smaller; both react sluggishly to light and in convergence. Right only perceives light. Left counts fingers at 18 inches.

Opthalmoscopic examination shows choked neuritis in both eyes, greatest in the left, the left disc standing out 6.5 dioptres, the right 4.5. The veins are full and tortuous, the arteries very thin. Hemorrhages are seen in the left, none in the right. But in the right is a small patch of choroidal atrophy external to the macula. The vessels are superficial to the pigment. Ears—almost total deafness of right, hears spoken conversation with difficulty at one foot with left. Gait—ataxic, most marked in right leg. Knee jerk, absent in the right, exaggerated in the left. Babinski's sign, doubtful. Reflexes of the arms are equal. There is inco-ordination of both upper and lower limbs. Anæsthesia—none discovered except on the anterior surface of the right thigh as shown in the diagram. There is paralysis of the flexors of the right thigh. Atrophy is also seen in this thigh, it being one inch smaller than the left. There is also some atrophy of the same leg. Bladder symptoms—Had to "hurry" to urinate, then has difficulty in doing so. These symptoms are not constant. Urine—specific gravity, 1016, no albumen. He has complained slightly of headache and sickness.

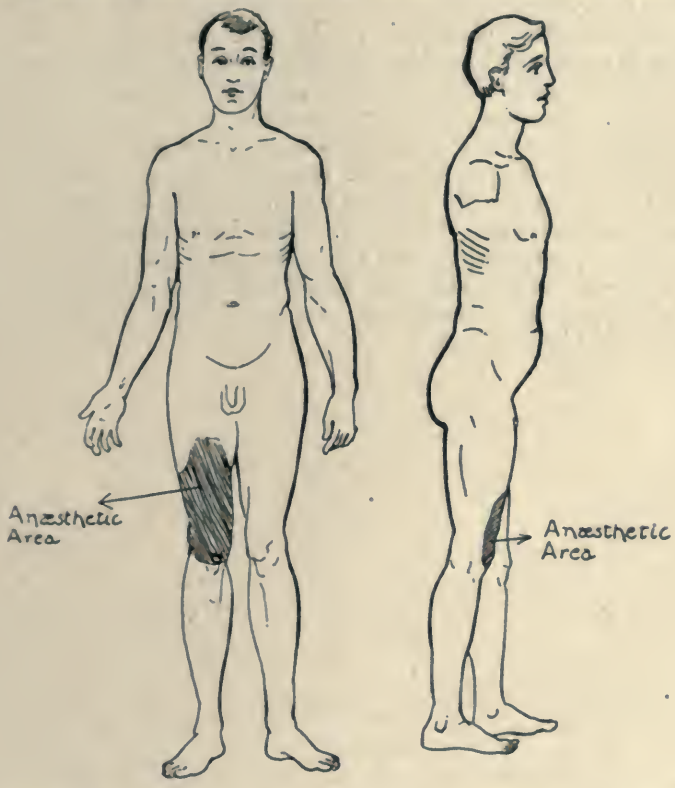
In considering this interesting case I shall dwell principally upon what information the ocular symptoms give us. In the first place the position of the eyes helps us in certain cases of brain disease. Thus in cerebellar tumor, they often stand upon a different level. But here the congenital proptosis prevents our getting any information.

State of the pupils. The inequality is often seen in cases of locomotor ataxia. But the fact that they react to light indicates that we have not to do with this disease.

The information gotten by examining the deeper parts is of great importance. The opthalmoscope shows that the optic discs instead of being, as in the normal state, hollowed or cupped, project forward enormously.

While the general symptoms previously spoken of might leave us in doubt as to whether we have here a purely spinal case or not, the condition of the optic discs shows at once a condition of pressure in the cranial cavity, probably caused by a tumor.*

Assuming, then, that we have a tumor to deal with, can we locate it? In the first place we have to decide whether the tumor is above the tentorium or below it. If it were in any part of the cerebrum it would almost certainly cause other symptoms in addition to the optic neuritis. It is quite possible, however, to have a tumor in the corpora quadrigemina



with symptoms as we see them here, viz:—ataxia and optic neuritis. How can we distinguish between the two localities? Usually by inquiring which symptom appeared first. If the optic neuritis appeared first followed by ataxia, the tumor is not in the cerebellum, but if the ataxia preceded the optic neuritis the tumor is likely to be cerebellar. To give its locality in the cerebellum is difficult in view of the fact that in this

* It would be tedious to discuss all the causes of choked neuritis. I think they may all be excluded except as stated above.

case the lesion is not single. For I think we have here to do with disease of the cord as well as the cerebellum. I would, however, hazard the opinion that the tumor is in the right hemisphere of the cerebellum, that it presses upon or involves the right auditory nerve producing deafness and that it is probably a glioma.

In regard to the extremities we have paresis of the flexors of the right hip and anæsthesia of the thigh and wasting as shown. Now the 1st, 2nd and 3rd lumbar nerves supply the flexors of the hip and the region of the anaesthesia. Are these nerves affected by some external condition, or is the cord degenerated? The fact that the bladder is involved points to degeneration of this region of the cord. The plus knee jerk of the left is also probably due to degeneration of the cord, and not to the cerebellar tumor.

Treatment.—Still considering this case from the opthalmological standpoint, we ask, can anything be done to relieve the optic neuritis, and thus restore the sight? Up to a few years ago such cases were considered to be hopeless. But now, thanks to the efforts of the surgeons, operations on the cerebellar region are not uncommon, and they are a recognized means for the cure of optic neuritis. It may be objected that the indefinite nature of the symptoms in this case would not enable the surgeon absolutely to come down upon the tumor. This is undoubtedly true, but the removal of a portion of the skull below the tentorium would take away pressure, relieve or cure the optic neuritis, and would therefore be perfectly justifiable, even if the tumor were not found. Therefore operation has been advised in this case.

SELECTED ARTICLES.

THE AMBULATORY AND HOSPITAL MANAGEMENT OF THE GASTROINTESTINAL DERANGEMENTS OF INFANCY IN THE SUMMER MONTHS AMONG THE POOR OF LARGE CITIES.*

BY HENRY KOPLIK, M. D.,

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GENTLEMEN OF THE AMERICAN PEDIATRIC SOCIETY:—I invite your sincere consideration to-day to a theme which is as broad and catholic in its bearing upon human happiness as any which can fall under the notice of the physician or layman. The care during the summer months of the vast number of infants and children ot the poor in our large cities is a duty which in some countries the State and in our country private individuals assume. There is a distinct state and economic reason for this. It is not simply charity that impels us to care for these wards of humanity at large. It is our own happiness and the welfare of the State that is bound up with the welfare of the proletariat and its offspring. For this reason any fact, any suggestion which tends toward the improvement of present conditions with these little wards of ours among the poor, tends toward our own elevation, moral and material happiness. During the winter months we find among the crowded dwelling places of the poor in large cities those conditions which in an aggravated degree in the warm season cause a great mortality among the infant population. We find the housing together of vast numbers of human beings creates conditions of filth which, held in check by the lower temperature in winter, in a minor degree cause disease. In the summer, when temperature favors, these conditions act in a manner to cause frightful mortality. In short, diseases caused by dirt infection are prevalent during the winter months but to a lesser degree than during the summer. We can explain this in great part by the fact that in winter the food, which is the principle source of infection to infants, is better preserved in spite of the constant factor of personal carelessness than in summer. In this country our statistics on this subject are very imperfect, but in France of all deaths below one year, one-half of the total mortality is due to gastroenteritis. In a small brochure by Madam Chaternikoff, we find that of twenty odd thousand infants below one year of life who died of intestinal trouble, between the years of 1891-98, in Paris, 3,639 were breast-fed and 18,818 bottle-fed infants. These figures are cited only to illustrate accurately conditions which exist to-day in every civilized land. In America and in my own city, New York, these conditions exist to a great degree, possibly greater than above indicated. The breast-fed infant is not exposed to any great or as many sources of infection as the artificially-fed infant.

*Presidential Address, American Pediatric Society, Washington, May 1, 2 and 3, 1900.

In the latter cow's milk is the substitute for the breast by common consent of all practical men. Yet before it reaches the infant it passes through so many channels, and is exposed to so many chances of infection, that we wonder the mortality is not larger than it really is. Milk, above all articles of diet, attracts to itself infection even if such infection is not directly introduced into the milk. The animals from whom the milk is obtained can first introduce infection. I do not refer to tuberculosis but to filth. The udder of the animal may be the means of introducing into the milk streptococci, which can cause virulent forms of diarrhea. Dairy dirt also may be introduced into the milk during milking. Again, in passing from utensil to utensil in commerce the milk is exposed to a thousand and one sources of infection. In the Congress of Pediatrists, held abroad in 1881, before the dawn of the proper understanding of the value of cleanliness in handling infant foods, great stress was laid upon cleanliness in the collection of the milk intended for consumption by the infant (Heubner). It remained for Soxhlet to show that the food must not only be brought to the infant clean and free from infection, but it must be preserved thus until consumed by the infant. By whatever means these things are attained to-day, all practical men will agree that the greatest light introduced into the dark and baffling problem of infant feeding remains absolute cleanliness. As to the food itself, we find that the vast number of infants attain their majority through the most diverse methods of feeding. Each is lauded to the skies by the originator. I need only mention names such as Meigs, Biedert, Rotch, Escherich, Backhaus, Gaertner, Heubner, Soxhlet, Hoffman, to show that the successful feeding of the healthy infant can be carried out artificially in a variety of ways. The foundation of all artificial feeding must necessarily be the breast feeding; and yet in this natural method we find the greatest diversity in the quantity and quality of the food, tending to give equally brilliant results. We have a limited number of studies upon breast-fed infants which tend to show that as to quantities one infant will take only 89 caloric equivalents daily, another 126 caloric equivalents, and yet both infants be equally well nourished (Heubner). Thus, we cannot always fix upon absolute quantities. Again, it has been well established by Meigs and others that the proteids of the breast milk are constantly low, 1 to 1.5 per cent. The fat, however, varies largely in the same milk and in the milk of various breasts, and yet the children of each breast thrive. If we turn to cow's milk, we have a more difficult problem. We must not only dilute the milk, but there is a large waste even in thriving infants of the proteid constituents of the milk. This is manifested by an increase in the phosphorus in the excreta (Knöepfelmacher). Thus, it is not enough to simply construct the infant's milk on the breast proportions, but we must take into account the above waste and also the necessity of dilution.

As to dilution the leading minds differ. Budin, Chavaune, Comby, Drapier and at one time Escherich employed simply undiluted sterilized milk. Gauchas, Marfan, Heubner, Jacobi, dilute the milk. Others, such as Meigs, Rotch, Escherich and Gaertner reconstruct the milk into proportions equal to that found in human milk. And yet in the vast number of infants outside of hospitals good results are attained by these

clinicians, else they would not laud their methods. The truth is that with healthy infants mixtures of the most diverse nature will give results if the food is clean and the dilution carried to a necessary extent. Given, however, an infant suffering from ever so slight a gastrointestinal disturbance, it becomes a difficult problem to feed that infant. We have an *infection* added to the difficulties. It follows that in all our work we should sharply divide the well from the sick infant, and the infant that is slightly ill from the severely ill infant.

That the gastrointestinal diseases, both mild and severe, are, in the vast number of cases, infections is the key note of my theme. This is as true of the gastrointestinal disorders which occur to a mild degree during the winter months as of those that prevail to a startling and decimating extent during the summer season. We must no longer look upon the care of this large number of helpless sick as a problem of infant feeding simply. The time is ripe and the additions to our knowledge decisive enough to warrant the view that in treating the infants of our large cities during the summer months for gastrointestinal disorders, we are face to face with the problem of the treatment of infectious diseases just as much as we would be in the face of an epidemic of typhoid fever, measles, scarlet fever or diphtheria. Nay, our responsibilities are greater, for the mortality and suffering are much greater than in any of the above disorders. We teach the doctrine of isolation and disinfection and prophylaxis in the above infectious diseases, but it does not occur to the average physician to teach the ignorant mother that an infantile movement even of a normal character is infectious; that personal cleanliness on part of the mother in her maternal duties to her offspring is essential to its well-being and health. The food of the bottle-fed infant if contaminated by the hand of the mother is a frequent source of danger. How many physicians have ever warned the average mother to wash her hands after the baby's toilet is completed and before preparing the bottle for the baby's consumption? Few, I dare say. How many men who are daily thrown in contact with infants ill with diarrhea make a distinction even in their minds of the simple and very infectious forms of bowel complaint? Even in institutions here in America where infants are taken care of, but little attention is given to the scientific examination of the infants' diarrheal movement before treatment is inaugurated. And yet our progress has been so great in the simple clinical diagnosis of the bacteriological characteristics of the infantile movement, that to-day it is an aid to the proper and rational treatment of these diseases that such examinations be made. Prognostic value is very great if we know to-day that streptococci are absent from a diarrheal movement and treatment is not necessarily as laborious in the simple diarrhea of the coli variety as in the severer forms of streptococcal infection. A distinction is in fact imperative to-day not only for the sake of our sick charges outside of our institutions but in institutions themselves to protect the healthy infants or those only mildly ill. This brings us to our present methods of caring for those infants in the summer months who are ill with diarrheal disease. We have two great methods of caring for these infants. The ambulatory method and the hospital or sanitarium method

By the ambulatoriums I refer to the great number of dispensaries and out-door services where these infants are treated. I think that the ambulatory treatment of summer diarrhea is thus far the most satisfactory. It does not presuppose conditions which I will show are conducive to increase rather than diminish the death rate. The sickest infants, those suffering from the severest forms of diarrhea, can be rescued by this mode of taking care of these infants. The large mass of sick is divided up among many institutions. The infants, to reach the dispensary, must be taken in the open. This tends to the good of the little patients who can be carried even in a febrile state out of doors without detriment. Let me describe the facilities of a large ambulatorium which for the past fifteen years has been under my own immediate supervision. When an infant suffering from diarrhea is brought to this institution it is undressed and examined carefully, the movements are studied grossly and examined microscopically and bacteriologically in a small laboratory in connection with the service. After such examination the little patient is then taken into a second room, which is well equipped with all apparatus for the treatment of gastrointestinal disorders. The treatment over, most careful directions are given as to diet for the succeeding twenty-four hours. The mother is told to bring the patient again. When the patient is convalescent to a degree as to permit the use of milk, it is given a proper food from the laboratory in connection with the service. This laboratory, now in its tenth year, feeds fully two hundred infants daily all the year round. The principles on which it is conducted are calculated to meet the greatest number of cases possible. The milk from which the food is constructed is as flawless as possible. Cleanliness is the all-pervading feature.

The effect of the food on the patient can thus be closely observed, and the food may be altered, or any other food substituted if the same disagrees with the patient. The mother is encouraged to persist in treatment by weighing the infant from time to time in order to demonstrate the improvement. The most important element in the modern management of these dispensaries for the treatment of summer diarrhea is this department for infant feeding, which I think should be established in connection with every dispensary service. It is not enough to give the patient a prescription and directions to go and get a food at some station or depot, and then leave the little one to the tender mercies of the mother and the bottle of sterilized, pasteurized or any other food. This, it seems to me, is a very rapid way of getting rid of much work, but it does not aid if it does not harm the patient. The feeding laboratory should be on the spot or easily accessible to the clinic, and the physician can thus in person supervise the quantity and quality of the food, weigh the infant from time to time, noting progress. Healthy infants as well as sick infants are harmed by the unrestrained use, uncontrolled by the physician, of food, no matter how good. The prescription laboratory method in direct conjunction with a clinic or infantile diarrheal disease is the only true method of obtaining any definite results. Nor should any infant either in health or disease, obtain food at any station, except upon a physician's order. I have frequently found it impossible to suc-

cessfully carry out the treatment of sick infants, because the mother would insist upon supplementing my milk quantities with milk obtained elsewhere. The infant thus was harmed by over-feeding. In my clinic we go as far as to furnish the water, in separate portions or bottles of six ounce capacity necessary for the preparation of simple albumen water in cases in which the infant is unable to take milk. In this way even an ignorant mother is impressed with the importance of attention to detail, even in such a simple substance as water. I mentioned the clinical laboratory; let me point out to those outside of this distinguished body, who may read my words, that the clinical bacteriological examination of the faeces of sick infants taught to us by Booker, Escherich and their pupils is one of the greatest advances in the true understanding of the clinical aspects of these cases. It is not simply a fad, it is of great value, if the movement reveals the absence of bacteria of a known virulent character such as streptococci. It also aids us in returning to a milk diet if we see the gradual disappearance from the dejecta of these dangerous elements.

The dispensary service should be equipped with apparatus which will enable the physician to acquaint himself with the above practical facts. A great advantage in the ambulatorium, even of large size, is that there is rarely a crowding or heaping up of serious infectious cases such as I will show must necessarily exist in hospital services. The rapid treatment of a large number of serious infectious diarrheas in a hospital even if carried out with greatest care is sure to result in infections being carried from the serious to the mild cases, either through the hands of the nurses, assistants or instruments. In a dispensary it rarely happens that the serious cases are in great numbers. The mass of cases are mild, the serious cases can easily be separated and treated with care, leisure and cleanliness. Thus among hundreds of small dispensaries a great number of infectious diarrheas can be treated without danger of infecting each other and with much better results than in one large institution. The absence of hospitalism is also a great factor.

In the summer the sickest infant is much better off on the street, taken daily to the ambulatory clinic if the clinic is equipped as above, than lying in the most elaborate hospital ward alongside of other infectious diarrheas. The heaping up of infections is the great danger element. Septic diarrheas with pneumonia seem in my hands to have done very well with the ambulatory treatment. In a brochure by Paul Ignard, Paris, 1899, we see that the mortality of gastrointestinal disorders treated in the hospital wards of Paris was very high, the cases almost all of them died. The ambulatory dispensary cases, speaking more especially of atrophy with chronic gastrointestinal derangement, did much better. The tendency in the hospital ward is to develop septic complications, such as bronchopneumonia or of a simple diarrhea to rapidly develop streptococcic features.

One of the most interesting brochures in recent years bearing upon the great dangers of the crowding together of nurslings in wards of hospitals is that or Heubner, of Berlin (Sauglingsernährung und Saugjingsspitäler, 1897: Berlin). Those who fondly think that the problem

of the treatment of these bottle-fed infants suffering from gastrointestinal derangement is solved by the food question alone, either in the sterilization or pasteurization of the milk, should read this very carefully elaborate monograph. Heubner shows that cleanliness in the feeding, separation of nurses into classes, by which the nurse who performs the infant's toilet is not allowed to feed the baby, has reduced the previous mortality of 80 to 90 per cent. to 65 or 70 per cent. But it must be noted that here there is a halt. Why such a great mortality of 65 to 70 per cent., which in some months Heubner shows even mounted higher? It was the crowding together of infection and infectious cases. By isolation of very sick diarrheal cases, by the construction of barracks in which fewer infants were treated and more nurses attended to the infants, he hoped to reduce the mortality still more. And there we leave this painstaking clinician battling with a difficult and discouraging problem. Why treat these infants in hospitals or sanitariums at all? I think many will answer that there are a number of destitute infants who for some reason or other must be treated in this way. Their mothers, on account of the severity of the struggle for existence, cannot leave work and attend to their offspring at dispensaries. I think this problem of mortality will never be solved as long as the present hospital ward system exists. I have seen discouraging results in sanitaria in which wards accommodating only four or six infants existed. There was every improvement, every facility that money could obtain and science suggest, and yet the infants lay in their cribs and the charts showed a daily loss of weight. How will this problem eventually be solved? To my mind, and I have given the subject thought and study, it can never be solved except on the colony or cottage or camping system, very much in the same manner that pulmonary cases are treated. I can conceive of a colony of huts, with plenty of air and light, each holding two beds and in bad cases one bed, separated from each other by sufficient ground spacing arranged on a high tableland, not necessarily near the sea, but on the contrary inland, where the air is not harsh but free from the heat of the city streets. Such small, primitive huts can be taken apart, disinfected and put up anew with each season. They should be arranged over acres of land around a central administration building, in which the physicians and nurses live and in which the food is prepared. The laundry should be built apart from all else. The mothers should live in the huts and conduct themselves much as they would in their homes; take their infants out into the open if ever so ill. At fixed times they can come to the central station and obtain their food and that of their infants, as at a dispensary. At a stated hour the doctor and his assistants will be at the main building, and once a day the infant can be locally treated and prescribed for and the mothers taught to give the food and medicine and also cleanliness in the toilet and handling of food. In this way the herding together of very sick infants is avoided and the ambulatory system is imitated as much as possible. Very sick infants, of whom there may be one or six a day, are to be especially looked after. If an infant is improving, it should not be held too long in such a colony, certainly not over a week or ten days. It is then sent home to be treated at the dis-

pensary. In all this I have in mind the breaking up of the ward system and the substitution of the cottage or hut or camp system, and this of the most primitive character. I have made it a colony for sick infants. I think the system in some of our cities of taking two or three healthy children with a mother and one sick infant into sanitariums is wrong, and open to objection. I have seen the healthy infants in such places develop a dangerous dirrhea from a house infection, having come to the sanitarium in a healthy condition. As to the nursing, it would be more of a supervisory than of an active character. The mothers would be taught by competent nurses how to wash their hands after caring for the diapers and to give the bath, food, etc. In this way the mother is educated and is the nurse for her infant and feels she is doing something for it. She would not be introduced, as she is to-day, into a barrick-like room full of beds, with other mothers, with the depressent features of such a place. Her cabin or hut would have every comfort in a primitive way; a small stove for a wood fire in damp, cold weather. The drainage must be from high ground and well planned, so that among the adult population no typhoid fever or dysentery may arise. The vicinity of the seaside is not necessary, in my mind. I am not an enthusiast for the damp, bleak days at the seaside which cause little epidemics of bronchitis and pneumonia among the infants when, as the natives say, the air is "too strong." Inland, even if somewhat warmer, on high ground, with plenty of shade trees, seems to me to be preferred in cases of weak infants as a site for such a camp. In such a camp I also presuppose that the physicians in their equipment have a clinical laboratory and the feeding will be conducted on principles laid down in the ambulatory treatment. The old method, in some places the present way, by which a dozen or more infants are placed in a ward, even if the infants be practically out of doors in a piazza enclosure, must certainly have been very discouraging to those of us who have had occasion to attend such a service. The infants do not seem to thrive. They seem to infect each other either through the nurses or assistants. They lose in weight and baffle all our efforts at progress.

An advantage of the camp system is that, should any infant develop measles, scarlet fever or diphtheria, it is by the system itself at the time in a condition of isolation and need not be moved, nor need others be disturbed or the business of the camp interrupted. And now let me say, that all the above is in the sense of suggestion. I am anxious to have the opportunity to see this system tried. It has the advantage of simplicity; it inculcates the principles of isolation of cases from each other, not by ward space alone but by sunlight and air. It allows of the application of our most advanced ideas to individual cases and is not as expensive as elaborate hospital pavilions, which do not aid us but rather increase our difficulties.

I will not take up the care of healthy infants in this address except to say that personally I am not in favor of housing healthy infants in large numbers in-doors any more than sick infants. Diarrheas are sure to crop up no matter how great the care observed. Thus, it does not aid us if, in order to treat a sick infant, we must take into an institution

the mother and one or two healthy young infants who may develop diarrhea of a dangerous character in the institution. We may improve the sick, but we endanger to an extent the healthy.

There are many more minor methods of caring for the sick and even healthy infants in our large cities during the summer months. I have only written of those lines of work into which fate has thrown me. I have endeavored to awaken an interest in new channels:—To inculcate the importance of gross differentiation of forms of diarrhea, of isolation of these various forms, of cleanliness, of the dangers of overcrowding, and the evils of bringing the sick and healthy under one roof.

And here let me close, hoping that the future will open up a new scientific era in the management of the summer disorders of infancy among the poor which will contrast favorably with the discouraging history of the past.—*Archives of Pediatrics.*

THE TREATMENT OF RHEUMATISM, ITS PROPHYLAXIS AND CARDIAC COMPLICATIONS.*

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I must first of all acknowledge the great honor, which I feel it to be to be requested to make some final remarks in conclusion of this discussion and I will mark my sense of that honor by being as brief as I can consistently with due respect to the number of very able and eminent speakers who have preceded me. I think, after hearing the remarks of some speakers at the last meeting and still more after the remarks of most speakers of this meeting, that we may fairly say that the profession are certainly prepared to accept, if not to welcome, the arrival of a microbe as representative of the rheumatic disease provided that it be duly accredited to us by scientific investigation. I am bound to say that although we have been well prepared for the possible advent in some saprophytic form of such an organism by the most elaborate and able Milroy Lectures of Dr. Newsholme to the Royal College of Physicians of London, the points of which have been given to us so carefully by Dr. W. Ewart, yet these arguments, metorological, bacteriological, epidemical, or clinical, do not, I think, do more than lend color to a preconceived hypothesis, however scientific it may be, of the possible existence of such a microbe. The position most likely occupied by such an organism has been placed near the surface of the soil. It is persumed to dwell in certain localities and even to lurk about certain houses; its avenues of entry have been defined as through the tonsil or possibly the air-passages or digestive tract, but beyond these statements with regard to the organism we cannot say that we know anything whatever about it and it has never been demonstrated to us. It does not, however, follow that it may not appear, and that soon. We can have no quarrel with any hypothesis which leads to so practical a therapeutical suggestion as that initiated by Dr. T. J. Maclagan—viz., the introduction of the salicyl compounds in the treatment of rheumatic fever.

There have been certain organisms discovered in rheumatic fever alluded to by Dr. Ewart—viz., the staphylococci, the streptococci, the pneumococci, and I think a few others—which have been found by certain observers more particularly in those cases in which the rheumatic fever has been associated with tonsilitis, and an interesting paper was read by Dr. P. S. Abraham before the Clinical Society last June in which he speaks of cases of rheumatic fever associated with throat affection. He divided these cases of rheumatic tonsilitis into two forms—faucial erythema, with which we meet as part of the rheumatic illness, and tonsilitis proper, the latter including follicular tonsilitis and ordinary quinsy. Dr. Abrahain found these organisms in the secretions and sections of the tonsils, in the blood, in the urine, and I think in the joint fluids. Dr.

*The reply to the debate on the Treatment of Rheumatism at the Chelsea Clinical Society delivered on March 20, 1900.

Abraham's observations are to my mind of great interest, but I venture to doubt whether they really throw much light on the point which he was trying to introduce—viz., the possible result of rheumatism from these causes. Dr. Abraham alluded to eleven cases, all of which were children except one, and from other facts mentioned in the paper I gather that almost all his throat cases were cases of follicular tonsilitis. I am not surprised at these organisms being found in the follicles of the tonsils and in the blood in the case of follicular tonsilitis, for follicular tonsilitis is a disease which is always regarded as one suggestive of at least a mixed infection, and one never sees a case without careful inquiry as to drains and sanitation. It was interesting to me to remember the occasional occurrence—I have only met with two cases—of infective endocarditis as a process arising in the course of primary acute rheumatism, and the fact of finding such organisms in association with acute rheumatism would lead one to see how perilously possible the occurrence of infective endocarditis may be in such cases.

With regard to the blood, however, but little has been said. There is a characteristic sign and a diagnostic sign almost, one might say, of a remarkable increase of fibrin in rheumatic patients only equalled by that found in pneumonia; the red corpuscles are notably decreased and the white corpuscles are increased. The total acidity of the blood is increased, or it is better, perhaps, stated that the total alkalinity of the blood is diminished. The acidity of the blood led many years ago to the lactic acid hypothesis of rheumatic fever which, I think, has been trenchantly criticised by Dr. Pye-Smith as an exploded idea. Whether this increased acidity be the result of some modified local metabolism or of some disordered intestinal secretion leading to the production of some ferment or to the advent of the bacterial ferment, which has been so largely supposed in the present discussion and in the current literature of the day, I am quite unable to say. On these points we must wait with due reserve for the further researches which are sure to be made and the enlightenment which will surely come to us.

It is a curious fact that the nervous system has been almost entirely forgotten in the present discussion and yet some will remember how lively a discussion took place twenty-five years ago as to the origin of rheumatic fever as a neuropathy, in which Dr. T. Buzzard took a very prominent part. When one considers how very closely allied the nervous system and arthritis are one cannot be surprised at such a hypothesis having arisen. We know perfectly well that rheumatic athritis is almost invariably a disease preceded by some appreciable nervous shock, agitation, or prolonged anxiety, and Charcot's neuro-arthritic cases are well known. Hyperpyrexia in rheumatic fever is almost the only possible way of people dying in this disease except from direct cardiac lesions. Hypepyrexia is a paralysis of the thermic control centres and is closely associated with the recedence of the proper rheumatic manifestations, although it is found in other diseases as well. Again, chorea is a disease of rheumatic and of nervous manifestation, and I must say that it was ingeniously and attractively disposed of by Dr. A. E. Garrod by saying that it was a sequel of rheumatic fever just as diptheritic paralysis and

such nerve lesions may be sequels of diphtheria arising from the specific action of toxins on the nerve centres.

With regard to the prophylaxis of the disease I do not think anything is to be said. Dr. Ewart asked many questions about the prophylaxis of rheumatic fever and he proposed to use a good many conundrums, but he did not answer them so far as I know. If one may criticise Dr. Ewart's paper in a kindly spirit I should agree with Dr. A. E. Sansom's remark that it was a little too arthritic. Arthritis is an essential feature of rheumatism even in children. You rarely meet with a child with "cardiac rheumatism" who has not exhibited pains called by the friends "growing pains" sufficient to hamper the liveliness of the child. The peculiar arthritis in acute rheumatism is a part of the disease, it is as ephemeral as the rose spot of typhoid fever with which to my mind it is closely analogous, and the duration in each joint is about the same. When it lasts longer in one or more joints one finds that the disease is not a pure disease but a mixed disease, such as gonorrhœal rheumatism or a rheumatism in association with hæmophilia, or possibly complicated by tubercle.

Still greater difficulty have I in regarding rheumatism exclusively from the cardiac side. Dr. D. B. Lees says it is a cardiac disease with arthritic complications. Dr. Lees deserves our gratitude for the clearness with which he puts before us any hypothesis he may have. There is no doubt whatever as to what he means; he briefly and frankly states the whole case from his point of view. With regard to cardiac dilatation in rheumatism, he regards cardiac disease not necessary as endocarditis, but as a gradual affection leading to the dilatation of the organ, and I think it is an interesting thesis for discussion. I confess that I had not observed this dilatation of the heart as a constant effect in rheumatism. It is possible that I have overlooked it. One examines patients, but looking back no one can say that he has examined all the cases with sufficient accuracy with regard to this one point to be able to exclude it. In anæmic cases, and especially in anæmic young women, who so commonly come into hospital with rheumatic fever, one frequently, of course, observes some cardiac dilatation. One may meet with cardiac dilatation in any febrile condition, and one is accustomed to regard it as attributable to that condition of muscle present in association with high temperatures to which pathologists give the delightful term of "cloudy swelling." I do not know quite what it means, but it is attended with a somewhat less distinct outline of the elements of the muscle and an increased softness of the tissues and is a condition that is very compatible with the possible yielding of the muscle before the blood pressure. Myocarditis we meet with as a cause of the enlargement of the heart, and fatty degeneration is a rare cause of sudden death in rheumatism. But these facts will not at all explain Dr. Lee's findings with regard to the heart in acute rheumatism; there is, so far as I can gather, scarcely any way out but that the heart must be partially paralyzed by some definite poison affecting it, such a poison as Dr. Lees describes as an undue acidity of muscular texture. Then, again, the rapid diminution in the enlargement of the heart under treatment is another point observed by Dr. Lees. Dr. Ewart

at a meeting of the Clinical Society of London endeavored to explain these cases by saying that there was some temporary effusion into the pericardium, but Dr. Lees will not admit this; and I can conceive no explanation except that which Dr. Lees expounded, only I think that he would fully expect that his observations would be received with a respectful scrutiny on the part of those to whom it was first presented. As regards the description, the definition of rheumatism, I should much prefer the very accurate definition which was given us by Dr. Archibald Garrod that it is "a systemic disease with arthritic and cardiac manifestations," a definition which is accurate and which is safely within the limits of our knowledge of the actual causes at work in acute rheumatism.

In my second Lumleian Lecture two years ago I ventured to sum up in a sentence the current treatment of acute rheumatism, which has drifted down to us from the experience of many years past. Such patients should be treated by "absolute rest in bed in woolen wrappings, a free relief of the bowels, and the administration of salicylate of soda in efficient doses in combination with such alkaline remedies as the condition of the urine may suggest," and I have been interested to see how far this ordinary routine treatment has been exemplified or departed from by those who have spoken, The object of the treatment is to diminish suffering, to lessen the duration of the disease, and to protect the heart. It is, of course, absolutely unnecessary in an assembly of practical men such as this is to speak of the necessity of keeping rheumatic patients in warm wrappings in a comfortable, well-ventilated room, and of securing a free relief of the intestinal secretions. I do thoroughly approve of the diet of patients being strictly liquid, and mainly milk for a good many days. Dr. Burney Yeo's remark was a valuable one and one apt to be forgotten in hospital practice, and that is, "Let the patient have a good drink of water if he wants it." One sees in hospital wards the careful manner in which water is given as if it were a potent medicine instead of a soothing drink. With regard to rest in the treatment I feel bound to linger a little, although less to-night as so much has been said. I do think that the profession have not yet fully grasped the exceeding importance of absolute and prolonged rest in the treatment of rheumatic fever, especially, of course, when the heart is involved. The inadequacy of treating the patient by rest has largely affected the statistics of the salicylate treatment. A practitioner will give salicylates to a patient and in two or three days the patient is free from pain and does not see why he should not get up. Determination is required to make him keep at rest. The salicylate treatment relieves the symptoms of the disease and subdues many of its important features, but it does not cure the rheumatic illness, it does not shorten the duration of that illness. You cannot get out of the rheumatic illness under four or six weeks, and if because the patient is relieved of pain he begins to move about he nevertheless is still a patient with latent rheumatic fever and may have a relapse and in all probability a relapse with cardiac complications. With children the slight joint affection often mislead the practitioner and the rheumatism may not be detected, with the consequence that relapses occur with cardiac complications. Dr. R. Caton was very emphatic about the import-

ance of rest in the treatment of rheumatism. I may venture to say that I think a good deal of Dr. Caton's great success in the treatment of rheumatism is due to his having so early recognized the extreme importance of continued long rest throughout the rheumatic illness. Dr. Sibson, who was the first advocate of the rest treatment in rheumatic fever, was curiously inadequate in his directions in regard to it, and his directions were that the patient should be kept quiet in bed "for a period of several days after the complete disappearance of the local inflammation of the joints." The point in the tr. atment of rheumatism is that so long as the tongue is coated the urine is loaded, and so long as there is a trace, even the slightest trace, of pyrexia people must be kept rigidly in bed in warm clothing and also for a period of a good many days afterwards even in the complete absence of any cardiac affection.

There is one little point in regard to temperature that is important. One so often hears it said that a patient has no fever of any consequence, that the temperature only runs up to about 99° F., or a little below, and you are told he is not feverish. But 99° in the mouth or the axilla is a morbid degree of temperature, and taken in association with the history of recent rheumatism or a slight endocarditis it is an absolute sign of the importance of preserving complete rest. As Dr. Maclagan said, inflammation of the valves of the heart is very slow to subside, and it is not a mere surface inflammation but affects the fibrous texture of the valves, which are ever in function; and when diminshed in resisting power by recent inflammation the extra strain upon them of several thousand impulses per day involved by the patient changing from the position of absolute rest to the upright posture, or sitting or moving, is enough to keep up the inflammation and to cause a deforming valvulitis. I remember well Sir William Jenner's memory-clinging words when he used to say in the clinical wards, "Children do not grow out of heart disease, they grow into it." That statement was mainly founded on the treatment of rheumatic fever in our hospitals and especially in children's hospitals where at that time particularly, rest, complete rest, for a sufficient length of time was not observed. I do not know whether the rest treatment can be observed fully in children's hospitals; the want of it is an explanation to my mind of that statement.

Again, I would venture to say from clinical experience that those two most grave cardiac affections of rheumatic origin, mitral stenosis and aortic regurgitation, or valvular lesions which are scarcely ever met with in primary rheumatic illnesses—They are almost always found in those cases which have left the hospital after a primary attack of acute rheumatism and have returned some months later. These two lesions are the consequences of subsequent slow deforming valvulitis from strain put upon the valves before they have completely recovered from the primary rheumatic lesion. In my experience, and in that of many of those who have spoken to-night, primary endocarditis is a curable disease in a large number of cases if taken in time and if the patient is retained at rest for a sufficient time to allow the valve to make recovery before the extra strain or function is put upon it.

With regard to salicylates, if they do not do all that which was orig-

inally claimed for them their usefulness cannot be gainsaid. Those who remember the controversies of some 30 years ago, when the relative values of alkalies, blisters, iron, mint-water, and cotton-wool wrappings were discussed, will agree that there was no very marked advantage in the treatment of the disease by any of them. As already said, it is the universal experience that salicylates do no affect the duration of the rheumatic illness, but they do reduce the temperature and relieve the joint affections. It would be idle to discuss the mode of action of the remedy with which we are after all somewhat imperfectly acquainted which neutralizes, although it does not extirpate, the rheumatic poison, a poison of which we know absolutely nothing. The salicin compounds are certainly remote antiseptics of considerable power. Those who have watched patients taking considerable does of salicylate will have noticed how long the urine can be left standing exposed to the air without undergoing decomposition. It is said that statistics prove that cardiac complications are more frequent in those who are taking salicylate and that relapses are more to be feared than under the alkaline treatment. I think that Dr. Ewart hit on the fallacy of the inference from these statistics when he remarks upon "the indirect risk that arises that we may be misled into over-estimating its anti-rheumatic powers and relax to early both treatment and diet."

It is said again, that salicylates have no influence upon hyperpyrexia in rheumatism, I do not know that any drug has an influence on hyperpyrexia when it is established, but in my experience hyperpyrexia has enormously diminished as a complication of rheumatism since the introduction of the salicylate treatment. Dr. W. E. Wynter has been kind enough to look through the records of the Middlesex Hospital for the last 30 years. In the years from 1870 to 1876—that is, before the period of the salicylate treatment—there were 952 cases of rheumatic fever with 30 deaths, that is to say, there was an average of 136 cases of rheumatic fever every year with an average death-rate of four and a quarter. In this period there were 11 cases of hyperpyrexia, of which one case recovered. In the remaining 21 years, from 1877 to 1897, all within the period of treatment by salicylate, there were 2,552 cases of rheumatic fever admitted into the hospital with 27 deaths, or an average of 121 cases instead of 136 cases per year, and with a death-rate of one and a half in 121 as against four and a half in 136. In that period there were only six cases of hyperpyrexia, all of which occurred in the first two years and four of which recovered. There has been no death from hyperpyrexia in the hospital since 1889. My impressions have been thus borne out by the hospital records. Then, again, in the treatment of hyperpyrexia I have made it a rule after reducing the temperature by cold to adhere to the the salicylate treatment. I think it will be found that where hyperpyrexia occurs in a considerable proportion of the cases the salicylate treatment has not been pushed very vigorously.

Pericarditis is spoken of as a common complication of rheumatic hyperpyrexia. My experience, and I should like to know if it is the experience of others, is to find in high temperature that it is common to hear a pericardial friction sound or a rough murmur at the base of the heart,

which is found to disappear when the temperature comes down nearer to the normal range. I have come to regard with great suspicion such adventitious sounds when presented in cases with a temperature above 104° and wait till the temperature is lower, looking upon them as often due to some temporary dryness of pericardial membrane or some changed hæmic state.

There have been various statementsas to the unfavorable effects of the drug, some maintaining that these effects are rather imaginative. I must confess that I do not agree with this opinion. I have observed a distinct case of renal hæmorrhage associated with salicylate treatment and I think Dr. Pye-Smith mentioned some cases also. Then, again, the occurrence of great slowness and great feebleness of the pulse is sometimes met with in people taking salicylates, so notably met with as practically to interrupt the treatment by salicylate. Now and again one meets with delirium with a falling temperature coming on in the course of rheumatic fever: that is in my experience always an untoward consequence of salicylate treatment and requires the treatment to be interrupted. With regard to the dosage various opinions have been expressed. I for my part shall say that a 15-grain dose is better than a larger dose, but it should be repeated at sufficiently short intervals to get the patient under the influence of the drug. When too large doses are given at first the drug is apt to cause vomiting or other disagreeable symptons. I fully agree with Dr. C. C. Gibbs that the influence of the drug should be maintained.

The effect of the discussion will be to rehabilitate alkalies in our good graces. The alkaline treatment was tried in its thoroughness many years ago and was found wanting, and although it still lingers as a tradition in some London hospitals, yet it has come to be softened down and to be mingled with the more efficacious salicyl treatment. Alkalies seem to be called for by the symptoms of rheumatic fever, but I should very much question whether they can have much influence upon that acidity which is said to be so potent in producing paralytic cardiac dilatation. For we must remember, at least I think I am right in saying, that the blood is never acid even in acute rheumatism; it may be less alkaline than is normal. As regards the sweat I have never observed the sweat of a patient to be rendered alkaline by the alkaline treatment even in cases where the urine is strongly alkaline. The urine is readily rendered alkaline, but I doubt whether it is of any advantage to make the urine, which is normally acid, alkaline in the course of the treatment of rheumatic fever. I should regard the usefulness of alkalies rather as increasing the oxidation of the tissues and promoting the elimination of morbid materials, whatever they may be, from the blood and should be inclined to give them in moderate doses.

With two exceptions, Dr. Donald Hood and Dr. Burney Yeo, opium has not been touched upon. It was at one time an important remedy in acute rheumatism. We do not now require to give opium to any great extent—it is useful for the first 24 hours for the relief of pain—but in myocarditis, in grave forms of endocarditis, and especially in pericarditis, the opium treatment is of immense value, its object being to cause organic rest, so far as organic rest can be given to an automatically moving organ,

by diminishing the rapidity of the pulse and quieting the restlessness and agitation of the patient.

With regard to blisters very much has been said and I should attach much importance to Dr. Caton's views after 19 consecutive years' observation. The idea of treating the surface nerves which have reference to the inner organs the area of distribution of which has been so ably pointed out by Dr. H. Head, is an attractive one. The possibility of producing a reflex vaso motory control of the affected valves is a very attractive hypothesis, but I still think it is rather straining physiological therapeutics to the extreme point. An ounce of fact, however, is worth a pound of theory, and Dr. Caton has found the application of small blisters useful in acute rheumatism, and one can only suggest its further trial. We all agree on the little value of digitalis in the acute cardiac affections of rheumatism. The treatment of the more chronic affections of the heart in rheumatism referred to by Dr. Sansom by regulated exercises and by saline baths seem scarcely to come within the range of the discussion. I believe he should agree with me that these therapeutical measures are unsuitable in the treatment of acute or subacute rheumatism with any active trouble in the valves.

I fear my remarks have been discursive, but I would say that for my own part I have derived the greatest possible interest and advantage in carefully watching this debate through and I think it is a discussion which will be of extreme practical help and value. It is a most important function of clinical societies, in my belief, occasionally to bring forward questions of this kind, to be discussed from a large point of view, collating the experience of many observers in order to formulate some efficient and valuable treatment of such diseases which are the more important because they are very common.—Gaillard's Med. Jour.

ONTARIO MEDICAL ASSOCIATION.

The twentieth annual meeting of this association was held in the Normal School Buildings, Toronto, on Wednesday and Thursday, the 6th and 7th of June, 1900.

The meeting was called to order on the morning of the first day at 10.30 a.m. by Dr. Adam H. Wright of this city, the first vice-president, who stated that owing to the death of their president since the last meeting, it would be necessary for the association to elect his successor.

Dr. Wright then vacated the chair, which was voted to Dr. R. A. Pyne, who called for nominations for the position of president.

Dr. Adam H. Wright was unanimously elected president, amidst much enthusiasm and after expressing his sincere thanks for the honour, called upon the secretary to read the minutes of the last meeting. These were unanimously adopted.

The report of the committee on papers and business followed. It was presented by the chairman of that committee, Dr. A. A. Macdonald. Adopted.

Dr. Allan Baines, the chairman of the committee of arrangements, presented a verbal report setting forth the entertainment provided for the members of the association during the progress of the meeting.

Reading of Papers and Discussions Thereon.

The use of Morphia in Puerperal Eclampsia.—Dr. David Hoig, Oshawa, read a paper on this subject, stating that his experience with eclampsia dated almost from his first obstetrical case in practice, and in this he was forced to use morphia from the severity of the convulsions, and with very gratifying results. He recited the history of eight cases, in three of which there was no history of any renal insufficiency. The case of a young woman in the eighth month of pregnancy was cited, in which the bromide and chloral treatment was first tried but failed. He then used ¼ of a gr. of morphia, but this also failed. The temperature was 104 and the pulse 150. Delivery was effected. Severe haemorahage followed, succeeded by two very severe convulsions, both of which were fully controlled by ½ gr. injections of morphia. Dr. Hoig has always made it a practice to examine the urine from time to time and he has frequently noticed albumen present, and no convulsions. He instanced another case where twins were born, no doctor being present. Ten minutes thereafter the woman was dead, without convulsions to account for it.

Dr. John Ferguson began the discussion of the paper. It was now generally recognized that you may have puerperal convulsions even of a severe type without the presence of albumen in the urine; and that you may have the occurrence of albumen for the first time known in the history of the patient, in fact abundance of albumen, without the occurrence of convulsions. You may also have a successful pregnancy in an old albumenuric, in chronic disease of the kidney without convulsions.

Dr. J. L. Bray, Chatham, speaking of the treatment, did not think that morphia alone was sufficient, as his experience with morphia has not been successful. Free elimination and chloroform has done more for him than morphia. He did not think that anyone really knew the cause of these convulsions. Another thing that Dr. Bray had noticed in his experience was that when he had a case of convulsions appearing before labor commenced, the prognosis was generally unfavorable; but when the convulsions came on after delivery, his prognosis had been favorable. He would lay great stress on free elimination. Give elaterium or croton oil. He further stated that in venesection he had found that often it was not possible to get the blood to flow at all freely. He mentioned one patient who had thirty-three convulsions after delivery and she got well.

Dr. E. Clouse, Toronto, stated that he had recently attended a case of confinement with advanced kidney disease. Saw her first about a month after conception, with swollen limbs and characteristic pasty complexion, and passing large quantities of albumen, about 25 per cent. of the urine. On consultation with two other physicians she was permitted to proceed to her confinement and she got along very well indeed without any convulsions and gave birth to a well-developed female child. A point of interest in this case was that about four or five days after the child's birth, there was a discharge from it corresponding with the menstrual discharge.

Dr. K. C. McIlwraith, Toronto, stated he had seen five of these cases during the past year, one case in particular being mentioned where the urine was almost solid with albumen, accompanied by great ascites and anasarca, the labor was good and no convulsions whatever. In another case, the urine had been examined one day and no albumen found, but the next day she had a convulsion and albumen was found afterwards. Speaking of the treatment, he has found that small doses of morphia had usually no effect, but ½ gr. in his experience, generally had controlled them.

Dr. Barrick took issue with Dr. Bray in regard to unfavorable prognosis where the convulsions came on before delivery. In half a dozen cases which he could then call to mind, only one of them died, where the convulsions appeared before delivery. He further stated that those who recovered had no trouble in succeeding pregnancies. Referring to bleeding, he mentioned a case where chloroform would not control the convulsions, bleeding was resorted, a half pint was drawn from the arm, the fits ceased immediately, and did not again occur.

Dr. Harrison, Selkirk, stated he had seen a great many cases of eclampsia, in an experience of fifty years, and his experience is exactly opposite to Dr. Bray's. When convulsions take place before delivery, you can deliver; and the chances were not so good when the convulsions came on after delivery. He had lost patients after and before delivery; but he has always regarded those coming on after delivery as the more dangerous. In properly selected cases, he would bleed.

Dr. Hoig in reply: he quite agree with Dr. McIlwraith that there was no use in giving small doses of morphia. He has had no experience in bleeding, but could readily believe that in properly selected cases, it might be of value. He referred to the debilitated state the patient was left in

after these attacks and thought that the long loss of albumen was responsible for many of the sudden deaths that had occurred.

Discussion in Surgery—Appendicitis, its Recognition and Operative Interference.—Dr. Luke Teskey opened this discussion. One of the most important conditions in the study of this disease is the recognition of many varieties, or perhaps better, degrees of inflammation which attack the appendix, and also various conditions which may be left by a severe attack. One may be prepared to find any degree, from the slightest chronic catarrhal appendicular colic, to the most acute and rapid gangrene. He divided this affection into three classes: 1—Chronic catarrhal appendicitis; 2—acute circumscribed appendicitis; and 3—the fulminating, or gangrenous appendicitis.

Speaking of the first variety, it is not difficult to recognize, when there are frequent repeated slight attacks of pain in the appendiceal region, coming on after slight exposure to cold, or after slight exertion, or sometimes without any well-defined cause, lasting a few hours or an hour or two, with possibly slight rise of temperature, or no rise of temperature, and the patient able to go on with his work the next day. In many instances the pain is not referred to the appendix, but frequently to the epigastric region. Other symptoms, sympomatic or general, such for example as symptoms of chronic indigestion, in effect, a loss of power in the digestive function throughout the alimentary tract, associated with marked loss of body weight, were very important. These sometimes caused this form of appendicular disease to be mistaken for a chronic tubercular affection of the abdominal viscera, and sometimes for chronic indigestion. In relating one or two cases before him of recent date, Dr. Teskey stated, that in these cases which were often looked upon as chronic indigestion, when an operation was performed for appendicitis this simple catarrhal condition was found, without any foreign body in the organ, but with enlarged lymphatic glands in the vicinity of the appendix. These attacks never caused the patient to lay up in bed, at most only colicky pain existing for a few hours. Invariably, the patient had lost, in these cases, in body weight. The symptoms had resembled tuberculosis. In these cases, little or no invasion of the abdominal cavity. After operation in these catarrhal conditions, the recovery of the patient was most complete and perfect, so much so, that within two or three months they gain back their body weight and usual power of digestion and usual health and strength; and that is the essence of the complete proof of the beneficial effects in that particular class of cases. The most reliable means of diagnosis in such cases is careful palpation of the abdominal wall in the iliac region. In some you may be able to palpate the appendix, but you cannot always feel it, and even when you do feel it or think you feel it, you do not know whether it is the appendix or not.

In reference to the second class,—acute circumscribed appendicitis,—that is the form of affection in which nature has succeeded in organizing adhesions, sufficient to incarcerate the disease to a limited area. This is perhaps the most frequent form. The attack begins with acute pain, perhaps most frequently epigastric pain; a rise of temperature; furred

tongue; indigestion; the abdomen becomes more or less resistent over the right iliac region; and tumescence on palpation, is found on the right side. The symptoms continue, with some tympanites, when on the second or third day, there is distinct tumescence to be felt in the appendicular region, and circumscribed suppuration has taken place. The recognition of this form of the disease depends largely upon the tendency of the symptoms to localize in the right iliac region. This form of appendicitis is not difficult to recognize after it has gone on for a short time. When the disease is low down in the pelvis however, you may not succeed in discovering it by palpation, and you must then depend largely upon general symptoms. If you cannot find tumesence, you will be able to get a degree of resistence, whether low in the pelvis, or up towards the liver. This degree of resistence together with general symptoms, will lead you to a diagnosis.

The third class of cases,—the acute fulminating or gangrenous appendicitis. Here reference is made to the greatest degree of intensity of inflamation, produced by the greatest degree of infection, which has created the inflamatory action, so that gangrene is invariably found in some form or another. At times it may not be localized in the appendix but in the adjacent structures. To this class, Dr. Teskey gives the name,—acute fulminating, or gangrenous appendicitis. Severe symptoms may be expected from the commencement onwards. Here the attack is so intense from the infection, or so virulent, that nature makes but an imperfect attempt to circumscribe the abscess. There will be great pain and acute rise of temperature; early tympanites; brown furred tongue; some resistance and rigidity of the abdomen; in fact symptoms of septicæmia. The characters of this variety of appendicitis, because of the acuteness and the intensity of the symptoms, render it not so very difficult of diagnosis. Sometimes, the amount of tympanites that exists, causes the physician or the surgeon, to overlook the localized condition. The patient almost invariable commences by vomiting, severe vomiting. Because of this, acute gastritis has been diagnosed. Palpation is interfered with from the marked tympanites which comes on. Very often the inscription on the death certificate is written,—acute peritonitis. These acute forms can also be recognized by the general symptoms, possibly by the previous history in connection with some difficulty in that region, and careful palpation before tympanites has become marked. After that occurs you are more or less in the dark.

Conditions which follow an acute attack: In a large number of instances, the result of an acute attack uninterfered with, is that various sinuses have been formed, imperfectly draining abscesses in the abdominal cavity, to various surfaces, perhaps most frequently to the intestinal surfaces. Discharge of pus through the intestinal tract may go on and recovery result, or a chronic discharge into some of the hollow organs of the body or to the surface of the body may result. When that chronic suppurative condition is imperfectly drained into some of the internal organs, it may become very difficult to diagnose the case in after years. Dr. Teskey here mentioned a case suffering for two years.

Operative treatment. Taking the first class of cases,—simple appen-

dicular colic,—shall we operate or not? When we have made a diagnosis, Dr. Teskey has no hesitation in pronouncing in favor of operation in all such cases. His reason is this, that the death rate should be nothing. The recoveries should be 100 per cent. A limited incision is all that is essential,—an inch to an inch and a half at the very outside. There should be no death rate from that operation; and you have relieved the patient from a constantly recurring painful condition. This simple form of appendicitis in many instances leads onwards to the more severe forms.

As to the second class of cases, shall be operate and when shall we operate? This is the one in which discussion has been rampant. Calomel and opium has been used a multitude of times; and there is no doubt of the possibility of the patient getting well. The physician says we will not submit the patient to operation, but we will trust to the process of nature, assisted by specific remedies. That is wrong practice. The physician who has taken that ground has taken a mistaken ground. In all instances he has jeopardized the life of his patient. If he can diagnose the condition within twenty-four hours, carefully feeling for the resistance, which one always finds in localized inflammatory conditions,—it may not be easy to find it at first, but practice will soon get one to recognize the resistance which is not usual, and which indicates appendicitis,—and as soon as he gets this located, and appendicitis exists, that is the moment for operation, and in all instances you should operate. If you do not operate and wait until abscess has formed, you can open the abscess and the patient recovers. Very true, but what follows? The patient has absorbed a large amount of septic material into his system. Already there may be an abscess in the liver. Abscesses may be set going almost in any part of the body, and then there is a localized abscess, and the intestines and omentum are entangled, and serious chronic trouble apt to follow, for many years in most instances But if you operate immediately before all that, you have saved the patient and you have run no greater risk so far as the preservation of the patient's life is concerned.

And third, in the acute fulminating or gangrenous appendicitis, the only hope for life is an early operation.

Dr. George Bingham: Dr. Teskey's views in reference to the treatment and diagnosis of this subject correspond so closely with his, that he has scarcely anything to add thereto. In reference to classification of this disease into forms, there was a difficulty, for the simple reason that unfortunately any given case, may be in class one to-day and in class two to-morrow. He was pleased to hear from Dr. Teskey that he does not claim to palpate the normal appendix. He referred to the vomiting which he thought occurred almost invariably. Examination per rectum had also been of use to him in the diagnosis. He dwelt on the importance of the interval operation considering it to be the ideal operation, and thought that the fatality here should be nil. In the case of the circumscribed variety, he was exceedingly glad to hear that Dr. Teskey approved of an early operation.

Dr. H. A. Bruce: He agreed in the main with the observations of Dr. Bingham and with those of Dr. Teskey. He took a little exception to the classification. In the second class he would put the simple acute,

and then under the heading of acute appendicitis, the particular variety which may be present in the case you may be dealing with, the name of perforative. He did not think we could say positively, before opening the abdomen, whether the appendix is in a gangrenous condition or not. Dr. Bruce made further reference to the diagnosis particularly dwelling on that between appendicitis and tubercular disease of the same region.

Dr. George Peters: The creed set forth seems to be, appendicitis,—operation. He could not quite agree to that. He thought most of the members present had seen cases of appendicitis get well and the patient remain healthy; perhaps only have a single attack. He thought all had even seen cases of more than one attack with recovery. Nor could he go as far as to say that every case of operation for appendicitis in the catarrhal stage would be followed by recovery, because one cannot always tell what condition the patient is in constitutionally as regards, diabetes, Bright's etc. Reference was made to the length of the incision advised by Dr. Teskey, and Dr. Peters though there were many cases in which you cannot remove the appendix through an incision an inch and a half long, as for instance in a patient with much adipose tissue in this abdominal wall. In regard to the diagnosis, he thought in the great majority of cases it was an easy matter, but whilst a good many cases escaped diagnosis, there were also a good many cases diagnosed as appendicitis that were not appendicitis at all. He did not believe you could feel the normal appendix, except in a very few cases, and then how can you tell you are not feeling a fold of the intestine. If however, it is diseases and thickened, you can feel it through a thin abdominal wall.

Dr. Wm. Oldright: With regard to operation or no operation he was strongly of the opinion that if a person has had a second attack of appendicitis, we should operate. With regard to the cases operated on between the attacks, the statistics are 98 per cent of recoveries; and although we cannot say positively that the patient will recover, the mortality may be put down at nil. Dr. Bruce has referred to finding grape-seed bodies in the appendix. This reference he considered unfortunate. He had never seen grape seeds in the appendix, and thought there occurrence there were very rare.

Dr. N. A. Powell spoke in regard to symptoms. In reference to the location of the pain, he thought not occassionally but uniformly, the pain is referred to the epigastric region; then it become unbilical, and then reaches the appendical region. He was glad that the point had been brought out, a medical point of great importance—that intestinal indigestion is antecedent to the attacks of appendicitis; not gastric, but intestinal. Then one should not pin his faith too much on a single symptom. He considered that nausea always and vomiting usually were present. Another symptom he would lay stress upon, was that of rigidity of the right rectus. Dr. Powell thinks it useful to divide the attacks into periods of the first twenty-four hours, the second twenty-four, etc. If you get over three complete days, and if the case is not getting along well, you are likely to have to deal with pus. 1 and ½ in. incision is too short in fat people. He further stated that Dr. Osler says there is no medical treatment of appendicitis.

Dr. Watson, Agincourt, spoke of the diagnosis and recited his experience with appendicitis. He thought it important to watch the breathing and the pulse. Examination per rectum, he had always found of benefit. Referring to the question of grape seeds, in one of these cases an enema had brought away a large faecal mass in which was embedded between forty and fifty of these bodies, but of course he could not say that any of them had been lodged in the appendix.

Dr. Parfitt, Toronto, referred to the differential diagnosis of what might be called typhoid appenditicis, appenditicis and gallstone colic, and the importance of examining the blood in appendicitis, to ascertain the the number of leucocytes.

Dr. A. A. Macdonald, thought that by and by we could come to have the courage to operate at once on every case of appendicitis; he looked forward to the time when the physician would say to his patient, you must be operated on now within twelve hours.

Dr. John Ferguson: If the case is a very mild one, and doubtful if it is appendicitis, but some distress in that vicinity, and the patient well and about his business in two or three days, he would not counsel operation in that case. He would advise the patient to keep himself under his physician's watch and care, and should there be a return of symptoms, he would then advise operation at once.

Dr. Teskey in reply: With regard to waiting for the interval, if you are called so late to a case that it is already resolving, and the symptoms are abating, of course wait for the interval. Dr. Bruce thought perforation should be included in one class as a variety. Perforation is always associated in the second class when it goes on to extensive abscess. He never removes a gangrenous appendix. He considers it a dangerous process ts interfere with imperfect adhesions which nature seeks to form as a limitation to the process. Palpation in the rectum he has found of very little value. It may be of value when you find a chronic abscess low down in the pelvis. Early operation was considered justifiable because it would lessen the death rate,—and that was everything; lessen the death rate.

Adjournment.

Afternoon Session.

President's Address:—At the opening of the general session on the afternoon of the first day, Dr. Wright delivered a very interesting and able address upon "The General Public and the Medical Profession," which was very cordially received by the members of the Association present. He referred to the progress of the profession and the stand it held in the community at the present day. The opinions of Mr. Gladstone and the Marquis of Salisbury were given, both of whom were on record as having said some very flattering things of the profession of medicine. Jealousies in the profession came in for his condemnation, and he thought it would be particularly happy for all if this was kept out of the profession as much as possible. The importance of attending the annual meetings of the Association was dwelt upon and emphasized, and a feeling reference was made to the death of the founder and recent president of the Association, Dr. J. E. Graham.

Dr. Wright was accorded a hearty and unanimous vote of thanks for his unusually interesting address to which he replied appropriately.

Discussion in Medicine—The Future of Therapy.—Dr. Lewellys F. Barker contributed an erudite paper on this subject, which was easily seen to be written in choice and elegant diction. He was thankful to have the opportunity and pleasure to return to Toronto after an absence of eleven years and to be accorded the honour of reading the Address in Medicine before the Ontario Medical Association. Although the title of his paper would lead one to expect considerable information about what the future held in store for therapy, it proved more to be a masterly review of historical character down the long line of the centuries. The history of therapy was intimately linked with that of medicine, and the past was rapidly reviewed until scientific study in the use of the microscope in histology, pathology and bacteriology was reached. The essayist dwelt upon organo-therapy, serum-therapy, climate-therapy and all and everything that one could bring to bear upon the treatment of disease. The stupendous advances being made in scientific medicine, and the vast amount of experimental and research work going on throughout the world now rendered it essentially necessary to emphasize the importance of a division of labor in the profession of medicine as well as in other walks of like. Dr. Barker was accorded a very flattering vote of thanks on the conclusion of his exceedingly able review.

Dr. McPhedran congratulated Dr. Barker upon his unusually able address. It was he said exceptionally brilliant. It was very gratifying to have one of our own students come home and contribute such a paper. He thought that the therapist of the future would be the man skilled in science, in all its bearings.

Dr. J. L. Davison considered the paper of Dr. Barker, a mass of erudition, but would have liked had he referred to the action of drugs. Whilst we had been brought up on drugs and fed on drugs, it was difficult to understand how the belief in drugs was going to pass away. He further referred to the action which one disease has in curing another, and thought this feature together with how drugs acted was still a very interesting side of the question. Referring to the question, what is disease, he stated, disease to be a condition of unstable equilibrium, while health was a condition of stable equilibrium. Electro., hydro., and other therapies were also alluded to.

Inter-Provincial Medical Registration.—Dr. J. A. Williams, Ingersoll, introduced this subject in a clever address. He detailed the history of the agitation for the reform of our laws so as to permit of legislation for this purpose, and then proceed to deal with the details of the proposed Bill now before the profession throughout the Dominion of Canada and which Dr. Roddick, M. P. purposes introducing at the next meeting of the House of Commons.

Dr. Thorburn in a brief speech said that the proposal had his heartiest endorsation.

Dr. Britton thought the proposed Bill as a whole a good one. He took exception to the appointment of one member of the Dominion Council by the Governor-General in Council. He thought that feature

objectionable as it might tend to make the body partly at least political.

Dr. Herod, Kingston, spoke at some length in the main concurring in the proposals as set forth in the Draft Bill.

Dr. Roddick, M. P., went into the subject exhaustively and asked for the unanimous support of the Ontario Medical Association as he believed that with the influence of such an important body behind him that it would go far towards bringing the matter to a successful issue. His burden was to get the legislation passed through parliament now; any minor details could be arranged afterwards. The provision of the Bill are now so well known that any synopsis would be superfluous, although Dr. Roddick explained it very clearly to the meeting.

Dr. Williams made a brief reply.

Adjournment.

Evening Session.

The evening session was held at McConkey's where one of the most enjoyable—if not the most enjoyable, banquet, in the profession here, was held. Dr. Allan Baines the chairman of the committee of arrangements was indefatigable in his efforts to make this function a pronounced success, and he must have slept happy and contented that night, because his efforts were crowned with supreme success. Dr. Wright presided. The usual toasts were drunk, and the following gentlemen made speeches: Drs. Sheard, Williams, Bray, Burt, Barrick, O'Reilly, Harrison, Bruce-Smith. Songs and music and an exceptionally fine and dainty menu were thoroughly enjoyed.

Second Day—Morning Session.

Acute Suppuration of Mastoid Cells.

Chronic Suppuration of Muxillary Antrum and Anterior Ethmoidal cells of 30 years' duration.

Dr. P. G. Goldsmith, Belleville, read notes of these cases, and presented the patient in the latter case. In the first three cases which came under his notice during the past year were noted. The first was a man fifty years who during a bad cold felt something snap on blowing his nose. Immediate pain in the ear followed. On examination perforation was found in the membrane, but in spite of proper treatment the mastoid became involved, and he was referred to Dr. James MacCallum, Toronto, who concurred in the diagnosis and agreed that operative procedures were advisable. This was done and the discharge stopped at once and the patient made a good recovery. In the second case the patient died, but on P. M. examination, the brain was not found involved. In the third case, recovery was noted.

The case of chronic suppuration of the antrum of Highmore occurred in a man aged 38 years. It began at the age of eight, after a severe attack of neuralgia of the fact by a yellowish discharge from the right nostril which has persisted ever since. The anterior ethmoidal cells were scraped with a great deal of relief to the patient. Then the antrum was drained in the usual way. Complete relief was noted for a few weeks, but the discharge returned, and Dr. Goldsmith now purposes to curette the cavity. Drs. L. L. Palmer and Price Brown discussed these cases.

The Committee on Credentials here brought in their report, which was adopted. The following were elected members of the Association: C. J. Copp, Toronto; R. K. Anderson, Milton; W. D. Scott, Peterboro'; J. H. Watson Toronto; John Grant, Woodville; A. L. Danard, Rocklyn; G. W. Clendennan, W. T. Junction; Murray McFarlane, Toronto; W. Thompson, Toronto; John D. McNaughton, Glenallen; L. G. McKibben, Toronto; W. C. Herriman, Hamilton; C. Lang, Owen Sound; C. S. McKee, Toronto; A. H. Perfect, Toronto Junction; C. D. Parfitt, Toronto; P. McG. Brown, Camlachie; J. D. Berry, Hastings; A. Carmichael, Sundridge and F. W. Young, Michipicoten Harbour.

Exploratory Incision in Obscure Brain Lesions.—Some points in the Surgical Treatment of Meningocele.—Dr. L. W. Cockburn, Hamilton, reported two cases of obscure brain symptoms without any definite diagnosis, both occurring in young men. In the first, no treatment being of avail, an exploratory incision was advised and accepted The dura and brain were both found healthy; the patient recovered completely from his symptoms thereafter. He considered this case as well as the second recorded to be one of cerebral neurasthenia. In the second case there was the history of a head injury in early life. Incision was also advised here, but up to the present time has not been accepted. His remarks on menigocele referred to an operation on a child with resultant death 13 days after the operation. He thought operation the proper method of treatment in these cases, and condemned the injection of any fluid such as Morton's. Dr. J. T. Duncan, Toronto, Dr. McKinnon, Guelph, Dr. Peters, Dr. Ferguson and Dr. Lett spoke to this paper.

Removal of Tubercular Testicle, Vas Deferens and Vesiculæ Seminales, at one Sitting.—Dr. George A. Peters reported this case, exhibited the pathological specimen, described the difficulties of the operation, and the final results.

Total removal of Vas Deferens and Vesiculæ Seminales for Tuberculosis.—Dr. J. Alexander Hutchinson, Montreal, by invitation presented this paper. It reported the excision of the right organ for secondary tubercular affection. It may be primary or secondary, but usually the latter. The first operation of this sort was done in 1890; and the first excision on this continent was performed by Weir of New York in 1895. The assayist described three chief methods. The method he had adopted and which he would recommend was that of Roux of Rosanne, the perineal route. The subject upon whom he had operated was a young man of 28 years, with a sinus in the right scrotum. It transpired that he had been operated upon for left testicular trouble with recovery. Recovery was noted and the patient had returned to England in good health to resume his work. Dr. Cockburn, Hamilton, and Dr. E. E. King discussed these two papers and their respective cases. Dr. Hutchinson closed the discussion.

Transplantation of Ureters into Rectum by Extra-Peritoneal method—Further Report of Case with Exhibition of Patient.—Refer to reports of Canadian Medical Association for notes of this case. The boy is now six years of age, and is in a healthy condition, able to play and run about with his playmates. He is able to go for eight hours

through the night without soiling the bed, if he does not drink very much before he goes to bed. He retains urine for two or three hours during the day. So far there has been no ascending infective trouble in the kidneys. The operation was performed extra peritoneally, and for this Dr. Peters claims priority and originality. Dr. W. Britton and Mr. Cameron discussed the case and congratulated Dr. Peters upon the results he had achieved.

Army Medical Arrangements for the War in South Africa.—Dr. J. T. Fotheringham, by means of interesting charts was able to deliver an admirably instructing address upon this now very lively topic. The Medical Service was exhaustively gone into and carefully and lucidly explained from the time the soldier was wounded in battle until he rested quietly and peacefully on board a hospital ship, the hospital at the base, or was invalided home.

Dr. Nattress followed, confining his remarks to first aids on the field of battle.

Dr. F. LeM. Grasett gave a highly interesting account of bullet wounds and what knowledge had been obtained in regard to this matter from South African experiences. He deplored the fact that Canadian surgeons had not been given a fair chance to participate as consulting surgeons, although this Dominion had supplied a very acceptable quota to the "sinews of war." Dr. Peters also participated in the discussion.

Cancer of the Rectum—Illustrations by Lantern Slides.—Dr. E. E. King gave an admirable exhibition on this subject. He presented two patients for examination by members of the Association, described his cases fully and concluded with statistics on the subject. Reports of these cases have already been published in the Toronto journals.

Observations upon Blood Pressure.—Dr. R. D. Rudolf, Toronto, contributed one of the features of the meeting. By means of the lantern, slides were exhibited, showing blood pressure in dogs under different conditions, together with the effects of drugs as chloroform, atropine, etc., upon the circulation and respiration. An interesting canvass picture was that referring to the new drug chloretone. The animal received a dose of .275 per kilo of the body weight, and ten minutes after the administration of the drug the animal was in the condition of anæsthesia, with regular pulse and regular respiration. Another chart showed the animal some hours later. That animal never recovered; and in the act of dying the respirations became lowered; the pulse has gone on very small; and the point was indicated on the chart showing where the animal died. The temperature fall was marked, the lowest being 82.4 Fh.

The Adaptation of Patient to Climate in cases of Phthisis.—Dr. N. A. Powell addressed the meeting on this subject. He considered mistakes are being constantly made although we were all honestly seeking for light and for guiding principles in this matter. In trying to adapt the patient who is stricken with pulmonary tuberculosis or who shows a tendency towards that disease, we have to consider, first, the patient, then the form of the infection, and then the climates available; we have also and very seriously to consider financial conditions of the patient. We are satisfied

that the very best results accrue from climatic treatment. Take these patients away from dust-laden and moisture-laden localities; put them upon dry soil, and keep them in the open air, and we will get for them prolonged and useful lives. The early case promptly removed and systematically treated, gives a very large proportion of recoveries,—extending up to 90 per cent. of recoveries. It is best to do this in the pre-tubercular stage, where we are not able to say by the physical examination that the lung is involved at all. There are certain clinical varieties which we meet with. First: the acute inflammatory type with high temperature and invasion of a large part of the lung tissue; they do badly anywhere. Then there are the classes characterized by early hæmorrhages. Of these, cases were instanced from his own practice. The cases of early hæmorrhages sent to moderate elevations, are ones which give us excellent results. Reports with regard to them from Colorado are not so encouraging as those which come from more moderate elevations. 1,500 to 3,000 feet seems to be much better in the hæmorrhagic class. Then we have the class of cases where the pleura is the point first affected. These do excellently in Muskoka. Speaking of the laryngeal cases, Dr. Powell did not think it advisable to send patients affected with this form of tuberculosis away from skilled laryngologists. We should never be content in sending a patient to a good locality, but we should send him to a good man in a good locality. If there is a sanitorium there, he considers it advisable to make use of it. As to cases of fibroid phthisis, in our Rocky mountain region and in our Muskoka region, we have places that will benefit them materially. He instanced cases now under his care that have made the best gain during the winter months. They will gain more in January, February and March than in any other three months of the year.

As to climate, we have practically only four varieties: the cool-moist and the cool-dry: the warm-moist and the warm-dry. Long ago we sent patients to Florida. They enjoyed it while there, but they came home and they died very speedily. There is a universal repugnance in the profession to-day toward sending patients to a moist warm climate. As regards the cool-moist climate, on the Atlantic sea-board, in the Lake Ontario, and Lake Huron areas, we find that as we pass inland from these that the cases of tuberculosis diminish. If we can take our patients to places of moderate elevations between 700 and 3,000 feet, take them into localities where we can have nearly or quite 300 days of bright sunshine in the year and where the rainfall is limited, and where the climatic changes are comparatively limited, we shall find ideal localities. In the mountain slopes of our North-West and in our northern regions we have an ideal climate. Dr. Powell concluded his address by emphasizing the the necessity of placing these patients when they are sent away from home, under the supervision of competent, skilful and reliable physicians

The relation of the Profession to Sanitoria for Consumptives.—Dr. P. H. Bryce, in presenting this paper, dealt with the recent legislation passed by the Local Legislature in regard to sanitoria for consumptives, the work which is now being done throughout Ontario in regard to the prevention and treatment of this malady, and proposed to move a resolu-

tion at another stage of the proceedings in regard to the formation of a Provincial Association for the prevention and treatment of tuberculosis.

Dr. John Ferguson, Dr. Wm. Oldright, Dr. Playter, Dr Carveth and Dr. N. A. Powell spoke to this paper. The meeting here divided into sections.

Surgical Section.

Extensive Necrosis of the Skull. Dr William Oldright presented the patient and photographs of the condition at different stages. A man aged 58 years, formerly syphilized, in whom the first appearance of the trouble was brought on about a year ago, after a slight injury, was exhibited to the members. The extent of the necrosis was a patch of four inches square, more or less. The dura could be seen in the opening.

Two Forms of Puerperal Infection. Dr. K. C. McIlwraith, Toronto, described two cases of puerperal infection in both of which a large piece of placenta had been left behind in the uterus. The lochia were collected by means of Doederlein's tubes, and cultures made therefrom. The importance of this procedure, was that the physician would know whether he was dealing with infection of a mild or more serious character.

Drs. Amyot, Kitchen (St. George), McNaughton (Glenallen), Machell and McKinnon discussed the subject after which Dr. McIlwraith replied.

The Removal of Septal Spurs—A Note Upon the Use of Carmalt-Jones' Spokeshave. Dr. D. J. Gibb-Wishart spoke of the advantages of this instrument in the removal of spurs of the septum, pure and simple, exhibited the instrument, and described its use.

Dr. Price Brown hardly endorsed its use.

Intusseption in Children. Dr. Primrose thought this was the most general cause of intestinal obstruction in children. He also referred to tumors as a cause of the condition. The symptoms were carefully gone over, and cases reported in which he had operated for the condition. He thought the trouble was much commoner in infants than was generally diagnosed.

Dr. McKeown spoke in regard to the medical treatment.

Drs Bruce, Macdonald and Howitt discussed the paper and the cases, the latter gentleman referring to eight cases already reported in the literature, which he had had in practice, the children being all under one year, recovery noted in seven, and the chief symptoms dwelt upon, He was of the opinion that this occurred far oftener than was supposed.

The Treatment of Squint from the Standpoint of the Family Physician and Nasal and Post-Nasal Senechiæ, by Drs. J. T. Duncan and Price Brown respectively were taken as read.

Dr. Henry Howitt presided over this section.

Medical Section.

Dr. Lett, Guelph, was elected to the chair.

The Aetiology of Acute Rheumatism. Dr. H. B. Anderson read a paper with this title. He spoke particularly in reference to Achalme's bacillus, reporting one case in which he had found this organism post mortem associated with staphylococci.

In discussing Dr. Anderson's paper, Dr. Bryce asked if the presence or excess of uric acid had any effect in the growth.

Dr. Cassidy asked if the bacterium is hard to obtain. Dr. Anderson's statements were of great value. In reading, he had seen the statement that acute rheumatism may proceed from several causes: firstly, hereditary; second, chemical lactic acid; third, uric acid; fourth, all three previous. How does lactic acid play a part? By supplying the acid medium for the microrganisms.

Dr. H. H. Oldright reported two cases dwelling in the eyeball, one a case of adhesions, and asked if this location would bear out the germ theory.

Dr. Lett asked if you can recover the organisms before or earlier in the case.

Dr. Anderson in reply, stated that the growth was better in the the urine of arthritics. Anærobic cultures were not made as a rule; hence probably the bacillus would not have been found This case died so soon after coming in that it was a good subject for examination. It has been found in the blood by Achalme.

Differential Diagnosis between Pneumonia and Pleurisy with Effusion. Dr. H. H. Oldright presented a paper on this subject.

Dr. H. C. Parsons asked for physical signs and characters of expectoration in one case reported.

Dr. Rudolf, re-use of the needle; there was no risk in an adult with carefully sterilized needle.

Dr. Lindsay, Guelph, reported a case with a mishap. The needle failed for a number of times to reach the abscess, but finally found deeply in the lung. Removed portions of two ribs and evacuated. Absorption was increased and the man went down rapidly.

Reply: Foul smelling; chest was completely dull. Needle: pus organisms might be carried into the lung tissue.

An Unusudl Case of Crossed Paralysis. Dr. D. Campbell Meyers read a paper on this case. It occurred in a man, aged 66 years, who has one child, a daughter, who enjoys good health. Last September the case came under his care with left facial paralysis and a history of a recent paralysis of the right arm. The family history of the patient was good. Previous history unimportant. The eyes are good and there is no paralysis of the tongue. Dr. Meyers considered that there were two lesions present in the case, one cortical, and the other peripheral. Under treatment, the patient was fully recovered in five weeks.

Dr. Ferguson asked as to lesions.

Dr. Meyers: There were none except some feelings of numbness.

Dr. Cassidy spoke of a case of facial paralysis in a young man with recovery in ten days.

Dr. Ferguson spoke of the double lesion in Dr. Meyers' case. He thought the facial lesion was peripheral; the arm lesion was evidently cortical. He thought there may be vaso-motor changes sudden in onset, and the production of paralysis may be only temporary.

Dr. Meyers replied. He thought Dr. Ferguson's vaso-motor theories quite possible, but difficult to prove. Thought Dr. Cassidy's case, a simple slight neuritis.

Erythema Bullosum. Dr. Graham Chambers contributed this paper. He defined this condition to be that form of erythema multiforme which exhibits in the highest degree the pathological change which is present in the latter disease. He looks upon the hyperæmic spot, papule, tubercle, œdematous nodule, vesicle and bulla, as lesions representing different degrees of the same pathological process. The forms of lesions are all inflammatory in origin, but there is always present in addition, more or less angio-neurotic œdema. Four cases were reported in all.

Dr. W. J. Wilson spoke of diagnosis between erythema bullosum and pemphigus. The latter sometimes follows vaccination as it did in two of the cases reported by Dr. Chambers.

Dr. Bryce spoke regarding the confusing preliminary remarks of smallpox, so important to recognize at present.

Dr. Chambers in reply: The classification of bullous eruptions is unsatisfactory. It is sometimes very difficult to differentiate them. Pemphigus is usually chronic; erythema bullosum, usually acute. Symmetry of lessions, multiformity of lessions. Thinks Dr. Wilson's point well taken.

Beds, their proper construction and care from the doctor's standpoint. Dr. Carveth read a paper with this title. The paper was discussed by Drs. Machell, Anderson, W. J. Wilson, Chambers and Bryce.

The Artificial Feeding of Infants. Dr. C. Sears McKee, Toronto, read a paper on this subject. He thought this subject was not given enough attention by the medical man as a rule. Cow's milk, and that alone, modified should be the only food in artificial feeding up to nine months. The various foods on the market were dealt with, and the modification of cow's milk given. Dr. Machell agreed with Dr. McKee regarding milk for children,—not patent foods. He gave a scheme for working out the proportions.

Evening Session—General Business.

Dr. A. A. Macdonald in the chair.

Report of Nominating Committee. This was read by Dr. Macdonald, which was adopted.

President.—Dr. A. McKinnon, Guelph.
First Vice-President.—Dr. R. A. Pyne, Toronto.
Second Vice-President.—Dr. W. H. Jeffs, Havelock.
Third Vice-President.—Dr. A. S. Fraser, Sarnia.
Fourth Vice-President—Dr. H. H. Sinclair, Walkerton.
General Secretary.—Harold C. Parsons, Toronto.
Assistant Secretary.—George Elliott, Toronto.
Treasurer.—Geo. H. Carveth, Toronto.

Next place of meeting, Toronto.

Report of Committee on Public Health. This was read by Dr. Gilbert Gordon, and adopted.

Under the heading of receiving the report of the Publication Committee, a discussion took place upon the desirability of having the proceedings printed in full. The matter was referred to the Publication

Committee and the Committee on Papers and Business to report at the first day's meeting next year.

The Special Committee on Inter-Provincial Registration not reporting, under this heading, a unanimous resolution was passed approving of the proposed Bill of Dr. Roddick.

The Ontario Medical Library was voted $75.

Dr. W. J. Wilson read the report of the Committee on Hospital Abuse, which was adopted.

The General Secretary's report and the Treasurer's reports were here presented, received and adopted.

The Treasurer's report showed cash on hand of $48.30.

Dr. Bryce read a resolution favoring the formation of a Provincial Association for the Prevention and Treatment of Tuberculosis, which was assented to by the Association.

Necrology Report was read by Dr. Cassidy in the absence of the chairman, Dr. J. L. Bray. It included Drs. J. E. Graham, James B. Campbell, London, Samuel Hagal, Toronto, Joseph Allen, Osgoode Station, and Dr. Corbett, Orillia.

A vote of thanks was unanimously passed to the Hon. the Minister of Education for the use of the Auditorium.

Another vote of thanks was unanimously passed to Dr. Adam Wright for the efficient manner in which he had conducted the meeting; to this Dr. Wright made a suitable and appropriate reply.

The usual honararia were ordered to be paid the secretaries.

Dr. Wright then installed president-elect Dr. McKinnon in office. Dr. McKinnon accorded gracious thanks for the honour which had come to him unexpected and unsought.

TRINITY MEDICAL ALUMNI ASSOCIATION.

The eighth annual re-union banquet of this Association was held in the Temple Cafe on the evening of the 18th of May, many members being present, both from the city and different parts of the province. Dr. J. Algernon Temple, the president of the association occupied the chair, our worthy dean being placed on his right and Drs. O'Reilly and Dwyer, of the Toronto General and St. Michaels respectively, on his left. After an enjoyable repast was attended to, the president proposed the health of Her Majesty, which was honoured in the usual loyal and patriotic fashion. A special toast to the hero of Mafeking was drunk to a rollicking chorus. Dr. J. T. Fotheringham proposed the toast to Canada. Dr. Sheard replied in patriotic language, pointing out the proud position Canada was now occupying in Imperialistic politics. Trinity Medical College, proposed by past president Dr. E. Clouse, brought dean Geikie to his feet in a characteristic reply. The Alumni Association, proposed by the president, was responded to in reminescent speeches by Drs Farncomb, Newcastle; H. H. Graham, Fenelon Falls; and Dr. Keane of Brantford, all emphasizing the importance of the association and the need of continuing to work for its advance-ment and success. Capital songs were contributed by Drs. Newsome and Gilbert Gordon, which contributed much to the enjoyment of the evening.

ELECTION OF OFFICERS:—

President, Dr. Allen Baines, Toronto.
Vice-president for Toronto, D. J. Gibb Wishart.
Vice-president for Western Ontario, Dr. J. W. S. McCullough, Alliston.
Vice-president for Eastern Ontario, Dr. Farncomb, Newcastle.
Graduates' representative, Dr. F. C. Trebilcock, Bowmanville.
Sec-Trea., Dr. George Elliott, 129 John St, Toronto
Assistant secretary, Dr. E. S. Ryerson, Toronto.
Auditor, Dr. Norman Anderson, Toronto.

The election of the vice-presidents for the other provinces was left left to the executive committee. Dr. Baines was then installed in the presidency by the retiring president, Dr. Temple. He thanked the association for the honour conferred and promised to make the next annual meeting a record breaker.

VOTE OF THANKS.—This was proposed to the retiring president by Dr. T. Millman, Dr. Temple replying, thanking the members for the compliment tendered him. The singing of Auld Lang Syne closed one of the most enjoyable reunions in the history of the association.

COLLEGE OF PHYSICIANS AND SURGEONS OF ONTARIO.

LIST OF THE FINAL, INTERMEDIATE, AND PRIMARY RESULTS.

The following candidates have passed the examinations of the College of Physicians and Surgeons of Ontario :—

FINAL EXAMINATIONS.—D. H. Arnott, London ; B. C. Bell, Chatham ; J. Y. Baker, Summerstown ; E. P. Bucke, London ; W. G. Collison, Mitchell ; Harriet Cockburn, Toronto ; N. Colville, Leskard ; G. L. Clarke, London ; R. F. Carmichael, Strange ; C. A. Campbell, Toronto ; E. D. Carder, Toronto ; G. W. Dowsley, Toronto ; M. K. Dillane, Tottenham ; J. Gow, Windsor ; W. A. Hall, Kingston ; H. G. Hargrave, Toronto ; R. C. Hiscock, Kingston ; A. C. Hendriek, Frankford ; G. W. Howland, Toronto ; Rowena Hume, Toronto ; G. A. Holmes, Chatham ; C. P. Johns, Kingston ; E. A. Jones, Whitby ; A. A. Knox, Toronto ; W. A. Kerr, Seaforth ; H. S. Kirby, Ottawa ; T. M Leask, Toronto ; S. J. Morris, Crompton ; W. A. MacDonald, Windsor ; Margaret McCallum, Toronto ; Helen MacMurchy, Toronto ; A. J. MacKenzie, Lucknow ; H. Mason, Toronto ; James Moore, Brooklin ; G. C. McGibbon, Arkona ; G. H. McLaren, Hamilton ; Kate McLaren, Toronto ; Dorothea Orr, Whitby ; J. H. Peters, Fergus ; R. Y. Parry, Dunnville ; W. G. Ratcliffe, St. Catharines ; D. G. Revell, Tyrconnell ; G. Ramsay, Toronto ; W. O. Simpson, Toronto ; A. T. Stanton, Pontypool ; J. R. Stanley, Granton ; H. R. Smith, Hamburg ; Nellie S. Skimin, Hamilton ; R. P. Vivian, Toronto ; D. C. Wilson, Parkhill ; G. C. Wagner, Toronto ; H. C. Wrinch, Toronto ; E. G. Weir, Toronto.

INTERMEDIATE EXAMINATIONS.—B. C. Bell, Chatham ; R. F. Carmichael, Strange ; E. N. Coutts, Harwich ; C. A. Campbell, Toronto ; E. D. Carder, Toronto ; H. C. Cameron, Rob Roy ; S. E. Charlton, Galt ; H. L. Collins, Kincardine ; H. G. Downing, Woodstock ; H. Dittrick, St. Catharines ; C. C. Elliott, London ; E. Flath, Drayton ; J. W. Fitzgerald, Peterborough ; W. A. Hall, Kingston ; H. G. Hargrave, Toronto ; R. C. Hiscook, Kingston ; A. C. Hendrick, Trenton ; G. W. Howland, Toronto ; C. P. Johns, Kingston ; A. A. Knox, Toronto ; H. S. Kirby, Ottawa ; James Moore, Brooklin ; A. J. MacKenzie, Lucknow ; F. W. Marlow, Blackstock ; A. S. Morgan, Kerwood ; F. E. MacLaughlin, Hamilton ; J. A. McClintock, Manchester ; Belle C. Oliver, Ingersoll ; A. R. Perry, Mount Forest ; R. Y. Parry, Dunnville ; H. P. Ross, Exeter ; E. S. Ryerson, Toronto ; W. E. Robertson, Milton ; E. J. Stubbs, Stratford ; G. B. Snyder, Abingdon ; P. L. Scott, Paris ; W. O. Simpson, Toronto ; C. L. Taylor, Wardsville ; F. C. Trebilcock, Bowmanville ; S. Thompson, Strathroy ; E. G. Weir, Toronto ; J. Webb, Hamilton.

PRIMARY EXAMINATIONS.—Passed with Honors : E. J. Davey, Stony Creek ; R. W. Irving, Ingersoll ; O. Klotz, Ottawa ; A. Moir, Dunnville ; P. W. Saunders, Toronto.

Passed Primary : E. W. Allin, Bowmanville ; G. M. Atken, Milverton ; A. E. Archer, Freeman ; E. A. Boyd, Jerseyville ; A. Brown, Motherwell ; J. Y. Baker, Summerstown ; J. D. Chisholm, Toronto ; Emma Connor, Chatterton ; B. A. Cohoe, Grand Valley ; F. A. Cleland, Meaford ;

J. L. Campbell, Ridgetown; F. J. Doherty, Eglinton; G. F. Dalton, Kingston; H. E. Day, Kingston; G. W. Fletcher, Blenheim; A. Fisher, Stratford; T. S. Genge, Halliford; J. W. P. Gray, Toronto; J. N. Gunn, Ailsa Craig; J. E. Godfrey, Meaford; G. W. Graham, Toronto; H. B. Hutton, Dungannon; J. L. Huffman, Aylmer; W. R. Hunter, Smith's Falls; V. E. Henderson, Toronto; H. G. Hargrave, Toronto; E. T. Hoidge, Toronto; J. R. Irwin, Port Hope; E. P. James, Galt; A. A. Knox, Toronto; H. S. Kirby, Ottawa; R. W. Leader, Plattsville; J. J. Mason, London; S. A. Moran, Trenton; A. Murdock, Brucefield; J. W. Merrill, Ottawa; W. R. Mitchell, Perth; N. T. MacLaurin, Toronto; K. MacKinnon, Guelph; A. H. Montgomery, Brantford; Elizabeth McMaster, St. Marys; W. A. McCauley, Keene; A. D. McEachern, Glencoe; M. D. McKichan, Hamilton; A. F. McLaren, Lancaster; H. N. McCordick, Jura; D. McBane, St. Thomas; G. McNeill, London; J. M. Oswald, Janetville; H. R. Parent, Windsor; R. W. Rutherford, Chatham; G. W. Ross, Toronto; A. B. Rutherford, Owen Sound; H. E. Roaf, Toronto; W. O. Simpson, Toronto; L. L. Stauffer, Waterloo; F. Shortt, Elora; D. Smith, Embro; T. Turnbull, Stratford; S. Thompson, Strathroy; W. T. Wallace, Orangeville; A. B. Wright, Toronto; O. C. Withrow, Toronto; W. T. Yeo, Little Britain; W. D. Young, Toronto.

THE RESIDENT MEDICAL STAFF TORONTO GENERAL HOSPITAL.

The house staff of the Toronto General Hospital for the year 1900-1901 has been appointed as follows:—

From Trinity University—Drs. W. A. Kerr, Seaforth; George A. McLaren, Hamilton; A. T. Stanton, Toronto; H. A. Smith, Toronto; E. Weir, Toronto; Drs. James Moore and W. H. Marshall, alternates.

From Toronto University—Drs. E. D. Carder, Toronto; J. Gow, Windsor; Goldwin H. Howland, Toronto; A. C. Kendrick, Frankfort; A. J. McKenzie, Lucknow; Drs. C. A. Campbell and A. Knox, alternates.

ONTARIO MEDICAL ASSOCIATION.

The twentieth annual meeting of the Ontario Medical Association, held in the Normal School buildings, Toronto, on June 6th and 7th, was largely attended and was generally considered one of the most successful in the history of the organization.

The subject of a Dominion Medical Council came up for discussion, and with some slight modifications it is evident that the Bill introduced into the Dominion Parliament by Dr. Roddick during the last session meets with the general approval of the profession in Ontario.

The various sessions of the Association were well attended and the discussions were spirited and interesting. We believe if those members of the profession, who fail to identify themselves with the provincial association, and gain the advantages to be had from meeting and interchanging ideas with their professional brethren, knew what they lost by so doing, the attendance at the annual meetings would be greatly increased. Not only are these meetings valuable for the knowledge one gains, and the incentive to better work one receives, but their social aspect is by no means unimportant. They are a pleasant break in the tiresome routine of medical practice.

The president, Dr. A. H. Wright, and the different committees that assisted him are to be congratulated on the success that attended their efforts on this occasion.

The Canada Lancet

A MONTHLY JOURNAL OF MEDICAL AND SURGICAL SCIENCE, CRITICISM AND NEWS.

The Oldest Medical Journal in the Dominion: Established 1867.

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EDITORIAL.

PREVENTION OF SUMMER DIARRHOEA.

The approach of hot weather once more directs our thoughts to the infant population, upon whom the coming season tells so heavily. Happy that child whose daily bread is drawn by its own efforts from nature's source and is not dependant upon art for the staff of life. The disease is one which claims its greatest number of victims during their second summer, not because they are any the less resistant than a year before, or as is too frequently said are teething, but simply because they are too old to be nursed and have reached the period when their diet is changing and becoming more liberal and varied. With the decreasing number of *good* mothers the proportion of infantile diarrhoeas in the first summer is increasing, bearing witness to the fact that improper feeding is one of the main factors in the production of the disease.

The question of infant feeding is a very large one, and one which, time and space forbid we should enter into in detail here. During the first nine months of life, milk in some shape or form, should constitute

the child's *sole* diet and for the next two years the *main* article of food. But, be it remembered, milk is a two edged sword which, if scientifically handled has no equal, but if, placed without restrictions in the mother's hands may work the child's destruction. The successful feeding of an infant requires close attention to many details, and it is our duty to see to it, that they are fully understood and strictly carried out. To accomplish this it is useless to give directions verbally. The details should be carefully written out and explained to the person who is to prepare the food. A separate bottle should be provided for each feeding in the 24 hours and each one fitted with a rubber stopper. An ordinary ℥iv medicine bottle is all that is necessary with two or three large nipples which will pull over the neck. The food should be made as soon as possible after the milk is received, each bottle containing just one feeding and all sterilized in boiling water for 10 minutes. The stoppers should be put in firmly immediately on removing the bottles from the stove, and after cooling the bottles should be put on ice or in a cool place till wanted, when one is to be warmed and given to the child. The proportion of fat, proteid and sugar are to be adjusted by the use of milk, cream, sugar and water in due proportions, varying them according to the needs and digestive powers of each child, remembering that fat and sugar are the most important elements for the child and that the caesin of cow's is more difficult of digestion than that of human milk. Cow's milk is usually acid and therefore requires to be neutralized by the addition of some mild alkali, such as sodium bicarbonate or lime water.

A popular fallacy, and one too which is frequently found amongst the profession, is that of "one cow's milk."

The mixed milk of a large herd is apt to be much more constant in its composition than is that from one cow, temporary indisposition of which materially alters the milk in a way that would not occur with the mixed milk. Absolute cleanliness of all bottles, corks, nipples, etc., is most essential and without it failure will be the result. A few simple rules should be given to the mother by which she could vary the proportions of the various ingredients of the food to meet slight disturbances of digestion at once and thereby save the child from perhaps serious trouble: If the motions become green or irritating, lessen the sugar; if curds appear in the motions or if there should be colic, lessen the milk; if the bowels are too loose but motions are natural, lessen the cream; if there be vomiting after feeding decrease the quantity of food. In following out the plan of preparing the whole days food at once there are many advantages, viz., 1st. It is easily and quickly done, which is very essential if directions are to be properly carried out. 2nd. The milk is

sterilized before changes have time to take place and is guarded against future contamination. 3rd. If a day's jaunt into the country or a trip by water is taken the required number of feedings is easily taken along and no variation of food is imposed upon the child's stomach. While the food must be our main consideration, there are other matters of importance to be attended to.

Perfect cleanliness of the child and its surroundings are most essential.

The daily bath, the temperature of which should be as cool as is consistent with the child's vigour and the state of the weather, must not be neglected.

The immediate removal of clothing soiled with motions and thorough washing and boiling of napkins before use must be insisted upon, as well as sponging of the buttocks after a motion. The clothing should be light during warm weather, but falls of temperature must be met by increase of covering, always remembering that a sudden drop in temperature is more apt to cause indigestion than is a rise.

Two or three cool days occuring suddenly after a hot spell, are frequently responsible for the disturbance of digestion which paves the way for more serious trouble when the hot weather returns.

To guard against chills at all times, even during the hottest weather, a light flannel binder should be worn, seeing to it that it is changed should it become damp either from urine or perspiration.

During the very warm weather the body should be sponged two or three times a day in addition to the morning bath, and the baby should be kept in a cool place and protected from the sun's rays.

A trip by water is most beneficial, but driving on hot dusty roads should not be sanctioned. F. F.

CONSUMPTION SANATORIUM FOR THE POOR.

There are at least two great reasons for the establishment of such institutions as these: first in order that the poor may have placed at their disposal the great essentials for successful treatment of pulmonary tuberculosis—abundance of fresh air and nourishing food, and second that by proper isolation of the infected, patients suffering from other diseases may not be exposed to the dangers of acquring consumption, as they are where both classes are received in the same wards of our general hospitals. The proper treatment of consumption is so expensive, as to place it quite beyond the reach of the poor, so that if they are to be properly cared for, the means, must be furnished either from private charity or at the public expense.

For the past two years there has been an agitation for the establish-

ment of such an institution near Toronto, and many of the medical men and others interested in the matter have contributed liberally to that end. A building, with present accomodation for nine beds, has been purchased at " High Fields," Deer Park, one of the northern suburbs of the city, and four patients are now under treatment,

The provisional Trustee Board consists of Lieut. Col. Mason, Ald. Davies, Mr. Robert Darling, Drs. A. J. Johnson, I. H. Cameron, and L. M. Sweetman, with Dr. Edward Playter, as secretary. The usual *per diem* allowance from the city and provincial government will be applied for, which, along with moneys received from pay patients, and donations from philanthropic persons, it is expected will suffice for the support of the institution. Properly administered we believe this charity will appeal to the support of both the profession and the charitable public.

EDITORIAL NOTES.

Canadian Medical Association.

The next meeting of the Canadian Medical Association will be held in Ottawa on the 12th 13th and 14th of September, and the local profession are making every effort to ensure its success. A number of distinguished visitors will be present and take part in the programme, including Mr. Edmund Owen of London, England, Professor Shattuck of Boston, Louis Gerster, of New York, Nicholas Senn, of Chicago, A. M. Hamilton, of New York and others. An address in Gynaecology will be given by Dr. Wm. Gardiner of Montreal. We are informed by the secretary, Dr. F. N. G. Starr, that the profession throughout the Dominion, signify their intention of demonstrating in a very practical manner, their sympathy for the misfortune that recently befell the capital, by helping to make this a record meeting of the association.

W. B. Saunders & Co.

Mr. W. B. Saunders, the head of the deservedly popular publishing house has associated with him in business Mr. F. L. Hopkins, manager of the subscription department, and Mr. F. T. Dagney, manager of the publication department, under the firm name of W. B. Saunders & Co.

These gentlemen have been connected with the house almost from its inception, and to them Mr. Saunders generously attributes much of the success that has attended his efforts, as a publisher, and takes this means of showing his recognition of the fact.

The Trade Book Department will be conducted under the management of Mr. W. D. Watson.

Guelph General Hospital.

On Saturday evening, June 9th, Miss Lilian Sheppard, Superintendent of the Guelph General Hospital, was presented with a gold watch, a purse and an address from the staff of the hospital to show their appreciation of her services since she went to that institution some six years ago. The address was read by Dr. Brock, the oldest member of the staff, and the presentation was made by Dr. McKinnon, the president elect of the Ontario Medical Association. Addresses were made by Drs. Howitt, O'Reilly. Stewart, Lindsay and other members of the hospital staff, all expressing, in very complimentary terms, their esteem for Miss Sheppard and their appreciation of her work.

This occurrence must be gratifying not only to Miss Sheppard, but to her friends who remember her excellent service, and her old time popularity when assistant Lady Superintendent in the Toronto General Hospital.

College of Physicians and Surgeons of Ontario.

We are glad to note that Dr. Wm. Britton has been elected to the presidency of the College of Physicians and Surgeons of Ontario. Dr. Britton's election will be received with satisfaction by the profession in general, for we know of no one capable of presiding over the Medical Council with more dignity, fairness and ability. The profession may rest assured in the wisdom of the choice of its official head for this year.

PERSONAL.

Dr. A. P. Scully, (Trin. '99), has been appointed resident surgeon at St. Alexis Hospital, Cleveland.

Dr. T. H. Middlebro', (Tor. '92), of Owen Sound, has recently passed both the primary and final examinations for the F. R. C. S. England. Dr. Middlebro' is to be congratulated in having taken this degree in less than a year—a record achievement, we believe. He was a house surgeon in the Toronto General Hospital in 1892, after which he began practice in Owen Sound, where he resumes practice on returning from Europe this fall.

Dr. Donald J. Armour, another old resident physician of the Toronto General Hospital, has received his F. R. C. S. degree. Dr. Armour is a Demonstrator of Anatomy in University College, London.

Dr. I. D. Archibald, of the retiring house staff of the Hospital for Sick Children, has left to assume his duties as Surgeon-Lieut. to one of the regiments stationed in the Bermudas.

Drs. E. E. King, Alex. McPhedran, J. J. McKenzie and H. P. H. Galloway attended the recent Congress of American Physicians and Surgeons in Washington, D. C.

Dr. J. R. Arthur, of Collingwood, was married on May 31st to Miss Katherine Robertson, daughter of Mr. Henry Robertson, of the same place. THE LANCET offers its congratulations.

Dr. Chas. S. Murray, of Laburnum Ave., Toronto, met with a painful accident recently. While wheeling he collided with another bicyclist, and being thrown heavily to the pavement, received a fracture of the left leg. Dr. Murray is now in the General Hospital and, we are glad to learn, is doing well.

Dr. Chas. H. Doherty (Trin. '99), has been appointed superintendent of the hospital at Nelson, B. C.

We regret to note that Corporal J. Jordan, Royal Canadian Regiment of Infantry, was wounded in the recent fighting before Pretoria. Mr Jordan is a third year medical student in Toronto University, and formerly belonged to the Queen's Own Regiment.

Dr. B. Spencer of Bloor St., has gone on a visit to Europe

Major Nattress, A. M. S., has returned after a short visit to New York.

Dr. R. J. Dwyer, superintendent of St. Michael's Hospital, leaves at an early date to spend a year in Europe.

Drs. H. A. Bruce, B. L. Riordon, Arthur Small and C. R Dickson, of Toronto, attended the recent meeting of the Association of Railway Surgeons in Detroit. Dr. Bruce was elected one of the vice-presidents of the Association. Drs. Radford, of Woodstock, McCarthy, of Niagara Falls, Jeffs, of Havelock, and H. H. Oldright of St. Catharines, were also present.

Dr. T. H. Blow, South Mountain, leaves shortly to spend a year doing post graduate work in Europe.

The many friends of Dr. Daniel Clark, Superintendent of the Asylum for the Insane, Toronto, will be pleased to know that he has quite recovered from his recent illness.

Dr. F. C. Walker, who recently graduated at Trinity University, has been appointed as house surgeon to the Ottawa Protestant Hospital.

Miss Snively, superintendent of the Toronto General Hospital Training School for Nurses, has been elected honorary treasurer of the International Council of Nurses, the headquarters of which are in London, Eng. Miss Snively is being congratulated upon receiving this high honor.

We regret to learn of the illness of Dr. Gilmour, Ex-M.L.A. and now Warden of the Central Prison, Toronto. Dr. Gilmour has a mild attack of typhoid fever.

COMMUNICATIONS.

THE TRAUMATIC ORIGIN OF CANCER.

To the Editor CANADA LANCET:

SIR,—In a recent medico-legal case the entire argument turned on the point, "can traumatism cause cancer," and if we take our text books we will find that every one of them says, "it is possible," but were they to add highly improbable it would be much nearer the truth. Not taking the individual merits of the case into consideration I would like, Mr. Editor, to discuss "the traumatic origin of cancer." We are prone when we do not know a thing to speak in general and indefinite terms about it, and according to the care with which we make our statements they last or are forgotten.

With respect to cancer this is exceptionally true and as we have no certain origin or sure cure it is a fit subject for every one to theorize on. The reasons put forward for cancer are legion. Under humoral pathology it was a dyscrasia of the blood.

Hereditary influences were called in and a third of the cases were accounted for.

Mental emotions have been accused, traumatism both simple blows and constant irritation.

Of late years the germ theories have been advanced, the Blastomycetes, cancerous parasites proven to be cell enclosures and so on. In fact any one who had the courage to make any definite statement as regards cancer origin had at once an army of observers after him to prove that he was wrong.

So, I say, it is only the broad indefinite statements with which our books are filled to-day that have lasted. Cancer is essentially the same in whatever part of the body or at whatever age it happens to come; whether it be in exposed places as the breast or lip or in a deeply seated organ as the pancreas; therefore I would hold that just as tuberculosis is always caused by the bacillus, so cancer must always have the same and as yet unknown origin.

Syphilis is quite as much a mystery as cancer as regards its first cause, but as we can control its symptoms by empirical medication we do not pay so much attention to its cause. But the bringing in of the antitoxin treatment for sarcomas and for other diseases has given an impetus to the laboratory men to try to find something which will stay the ravages of cancer.

The desire to find a plausible excuse for one of our greatest and most terrible scourges has led, in my opinion the writers to say that one of the causes of cancer is trauma. An unfortunate woman comes with cancer of the breast, she hears the diagnosis and demands, why? Her adviser immediately asks, do your corsets irritate your breast? Have your parents or relations suffered from this disease? have you ever been struck? and according as he gets his answer it is written in the history and she is told that that is the reason.

It is because of our complete ignorance of the cancerous process that we are led to make such flimsy statements. The medical world would not believe Koch had discovered the tubercle baccillus until he had isolated it, inoculated it and grown it again and proved it beyond all doubt, but still it is put in our sheep-bound authorities that traumatism will cause a disease such as cancer.

We perform a surgical operation through an unclean field or with dirty instruments the result is suppuration, but the cutting and traumatism did not cause it, it was the pyogenic organisms introduced. This is proven by the wounds healing without pus in aseptic surgery.

A young man falls and hurts his knee, tubercle is developed, it was not the blow that did it, without the germs being there the blow would pass unnoticed.

Again continued irritation is brought forward as a certain cause and cancer of the lip is blamed on smoking clay pipes. I would ask is cancer of the lip more frequent among Irish laborers than others? I think not. We have all seen cancer of the lip in non-smokers. The most serious one I ever saw was in a man who had never used tobacco in any form.

Then the ostia of the body are quoted in this regard, but as tubercle has a preference for the lung, so this particular disease may have its sites of election.

Cancer is always essentially the same structure and kills in the same way, barring the mechanical constrictions of the bowels, etc., in which perforation may occur and peritonitis be the immediate cause of death. But in the main the cancer process kills by some subtle poison which we do not as yet understand, but without which carcinoma would be as benign as any of the tumors.

The most plausible of the theories, and to my mind most plausible because it is most unanswerable, is the Cohnheim rest theory as put forword by N. Senn, of Chicago, he says:—"Traumatism can no more cause cancer than suppuration can take place without micro-organisms. The trauma can only act as an exciting cause in stimulating a pre-existing matrix of embryonic tissue into active tissue proliferation. No one knows anything of, and no one has ever had the temerity or good fortune to describe these embryonic rest-tissue cells; in fact it gives one the idea that we all go through life with one of these miserable unlocated embryonic rests, which at the slightest injury or irritation will flame out into cancerous growth. Would it not be better to say we are as yet ignorant on this subject instead of perpetuating these mysterious and altogether unreasonable theories. Perhaps in the near future some researcher will happen on the true and invariable cause of cancer, but until then let our pathologists and laboratory men exercise patience and work, for once the certain cause is found we may hope for some sure antidote to the poisons of cancer. *My plea is, one disease one origin.*

M. W. COLEMAN, B.A., M.B., Tor., M.D.C.M.

BOOK REVIEWS.

PROGRESSIVE MEDICINE.

Edited by H. A. Hare, M.D., assisted by C. A. Holder.

The first volume of this very excellent serial for 1900, has appeared, and enhances the already high reputation the publication has secured. The table of contents includes Surgery of Head, Neck and Chest, by J. C. Da Costa, M.D. Infectious Diseases, by F. A. Packard, M.D. Diseases of Children, by A. D. Blackader, M.D. of McGill College. Pathology by Ludwig Hektoen, with chapters on Laryngology, Rhinology and Otology. The Volume is well worth purchase by any practioner were it only for the one article in which he is specially interested. J. T. F.

PRACTICE OF MEDICINE.

A Manual for Students and Practitioners by G. E. Malsbary, M.D. and B. B. Gallaudet, M.D.

This is another in the series of pocket text books issued by Lea Bros. & Co., N.Y. and Phila.

One is prepossessed at once in its favor the "short, concise table of contents," a monument to the value of Bacteriology to the Nosologist who seeks to classify disease on lines of Aetiology rather than of clinical signs or course. But of the 388 pages of which the book consists, 167 are given to a single class. The Infections, in which one finds grouped all the diseases whose aetiology has been reasonably determined, from Scarlatina and Foot and Mouth Disease to Malaria and Trichiniasis. The very latest definite bacteriological findings seem to have been noted in this classification. The other chapters are on the diseases of the Organs of Digestion, Respiration, Circulation, the Blood, and the Genito-Urinary Organs. No mention is made of Nervous Diseases, even so ordinary a trouble as Chorea is untouched—but this of course must be part of the plan of the authors.

TIRARD'S MEDICAL TREATMENT.

A Text-Book of Medical treatment of disease and symptoms for the use of Students and Practitioners of Medicine. By Hestor Tirard, M.D. F.R.C.P., Professor of Principles and Practice of Medicine, King's College, London. Adapted to the U. S. Pharmacopoeia by E. Quin Thornton, M. D., of Jefferson Medical College, Philadelphia. In one octavo volume of 624 pages. Just Ready. Cloth, $4.00 net. Lea Brothers & Co., Philadelphia and New York.

In the medical world, a healthy sign of the times is the renewed interest in the subject of practical therapeutics which has taken place and the number of excellent text-books upon the subject that is appearing. This is with the idea of bringing the treatment of disease in line with the advancement in other branches of medical science—particularly

in pathology. Following on the therapeutic scepticism and nihilism which resulted from too close attention to Nature's failures in cure, as illustrated by dead house pathology, this revival of interest in treatment must be particularly gratifying to the general practitioner.

Dr. Tirard's book is one of the kind to which we have referred. It is conservative in so far as it has retained the good things which the accumulated experience of years has endorsed in treatment, and it is progressive in that it deals with the latest advances in scientific therapeutics.

The work is one which will give satisfaction.

PUBLISHER'S DEPARTMENT.

The extensive use made of Heroin in clinical practice during the past one and one-half years, and the abundant literature that has already appeared on this new preparation, enables us to formulate some positive conclusions as to its definite status in the materia medica. One of the most striking features of this drug is its remarkable action upon the respiratory organs, its effect consisting in the reduction of the number of respirations, with an increase of their force. Besides this it exerts a sedative influence upon the air-passages, as evidenced by the alleviation of cough and irritation. Heroin has also been employed as a general analgesic, but it is yet to early to form a positive idea of its utility in this direction. It is worthy of note that in the literature thus far published very little reference has been made to after-effects, and these for the most part have been of mild degree and observed chiefly in cases where the dose has been excessive. Like any active remedy, heroin must be used with proper discrimination and in doses adapted to the age and to the indications present. Professor Manges (New York Medical Journal), who has made a most exhaustive clinical study of heroin, writes as follows on this point:—"The general conclusion is that these effects have occurred in a surprisingly small percentage of cases, when it is borne in mind that in so many instances the larger doses (one-sixth of a grain) have been employed. Even the effects which have been recorded are only relatively simple, and in no case was there any serious effect noticed. These after effects are decidedly of less frequent occurrence and of milder degree after heroin than those from morphine or codein." If attention is paid to these points no special precautions are necessary in the use of heroin, except such as apply to any remedy in the pharmacopeia. To obtain the best results it should be administered in much smaller doses than the opium alkaloids, and these may later be increased if necessary. Prof. Max Einhorn (Philadelphia Medical Journal) concludes on the ground of his experience: "It will be readily seen from the above that we possess in heroin a very valuable therapeutic agent. It principally allays cough and eases respiration, but it has also general analgesic properties which renders it of benefit in most painful affections. Except slight dizziness and occasionally dryness in the throat, which I found but rarely, I have never seen any unpleasant symptoms even from a prolonged use of heroin, and I can heartily recommend it as a very valuable remedy."

SYP. HYPOPHOS. CO., FELLOWS

CONTAINS

The Essential Elements of the Animal Organization—Potash and Lime ;

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It differs in its effects from all Analogous Preparations: and it possesses the important properties of being pleasant to the taste, easily borne by the stomach, and harmless under prolonged use.

It has gained a Wide Reputation, particularly in the treatment of Pulmonary Tuberculosis, Chronic Bronchitis, and other affections of the respiratory organs. It has also been employed with much success in various nervous and debilitating diseases.

Its Curative Power is largely attributable to its stimulant, tonic and nutritive properties, by means of which the energy of the system is recruited.

Its Action is Prompt: It stimulates the appetite and the digestion ; it promotes assimilation, and it enters directly into the circulation with the food products.

The prescribed dose produces a feeling of buoyancy and removes depression and melancholy ; *hence the preparation is of great value in the treatment of nervous and mental affections.* From the fact, also, that it exerts a double tonic influence, and induces a healthy flow of secretions, its use is indicated in a wide range of diseases.

When prescribing the Syrup please write, "Syr. Hypophos. FELLOWS" As a further precaution it is advisable to order in original bottles.

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Intolerant Ulceration of the Rectum.

Dr. Sterling B. Taylor of Columbus, Ohio, read a paper in which he reviewed the surgical anatomy of the anal portion of the rectum at considerable length. In the early stages of intolerant ulceration physicians were inclined to discredit the presence of any severe pain, inasmuch as in its incipiency it was merely a rent or tear in the mucous membrane. This was prevented from healing by the lodgement of small particles of fecal matter, which produced irritation and inflammation and eventually painful ulceration. The extreme pain made its appearance with the unhealthy granulations. Pain was not the only disagreeable accompaniment, as there was often annoying and sometimes dangerous hemorrhage, especially if the ulcer was located high. The usual seat of the ulcer was at the posterior commissure, and it was here that it was most painful. The anterior commissure was the next favorite seat of the ulcer. In the treatment the essayist recommended the method practiced by Martin, which he considered simple and effective. No general anæsthesia was required, but simply infiltration anæsthesia, which was affected by the injection of a few drops of a one-tenth of one per cent solution of eucaine or cocaine around the ulcer. A slight incision was then made through the membrane and integument down to, but not through, the sphincter. The operator then packed with a small piece of iodoform gauze. The bowels should be kept open with some laxative, preferably a mineral water. Apenta water was both pleasant and efficacious. Several cases were reported in which the Martin method of treatment was resorted to. Dr. Taylor held that rectal ulcers could be excised under eucaine anæsthesia without pain.—*Medical Record.*

Treatment of Post Febrile Conditions.

The convalescence following fever is often very tedious and unsatisfactory, and in none of the continued fevers is this more marked than in typhoid fever, resulting largely from the fact iron in the blood is below the normal standing. As a reconstructive in such cases nothing is more urgently required or produces better results than an easily assimilated salt of iron which will not constipate or upset the stomach and which can be administered for a considerable period without causing distaste, gastric disturbance or other unpleasant symptoms. These conditions are eminently filled by that elegant preparation "Lig Ferri Albuminates" (Lettes). So fully has this fact been appreciated that the Red Cross Society have sent a large shipment of it for the use of Canadian soldiers in the fever wards of the South African Hospitals. The shipment went forwarded by the S. S. Montery landing at Cape Town, April 9.

Any druggist in Canada can supply it.

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PRESIDENTIAL ADDRESS ONTARIO MEDICAL ASSOCIATION.

THE GENERAL PUBLIC AND THE MEDICAL PROFESSION.

BY ADAM H. WRIGHT, M.D.

According to the constitution of this Association, I am now called on to deliver an address, setting forth the conditions of the profession in this province, with such suggestions as I deem it proper to make. In referring especially to the relations existing between the profession and the public in Ontario, I may say, in a general way, that they are pleasant and satisfactory. Our efforts, in a private way, and in a public way, are at least fairly well appreciated. The public are frequently kinder to our profession than we are to each other. In this respect history is simply repeating itself.

If we consider some of the triumphs of medicine during the century now closing, we will find that some of our heroes got but little or no support from their professional brethren One of the most important features of the early years of the century was the complete triumph of vaccination. Edward Jenner had perfect confidence in vaccination in 1770; but, after that, he labored quietly and persistently for thirty long years before he published his first treatise on the subject in 1800. We were told by Dr. Ward Cousins last year, that, although the new method spread rapidly over the whole civilized world, the acceptance of vaccination was due to the efforts of public-spirited men rather than to those of the members of the medical profession. Many of the doctors of that time considered vaccination as pure quackery, and even charged the vaccinator with flying in the face of heaven.

About the middle of the century Semmelweis made a great discovery in midwifery. In 1874 he enunciated the view that puerperal fever was caused by the introduction of putrescent substances from without, and used chlorine as a disinfectant. By his new method he reduced the mortality in one of the lying-in hospitals from 11.4 to 1.27 per cent. Notwithstanding the proof he adduced, his views were bitterly opposed by

the great mass of the profession. We have been told by Cullingworth, that he was ridiculed and despised, and finally died insane, the victim of continued persecution.

It is much more satisfactory to consider the work of another hero in the latter half of the century—that grand man of our own time—Lister, who has reached so high a niche in the temple of Fame. It is pleasant to think of those "gifts of nature which gave him a happy combination,

> The patient thought, the steadfast will,
> Resolve and foresight, strength and skill,

which he has laid upon the altar of suffering humanity" (Mr John Wood), and through them the great work he has accomplished. We all rejoice that Lord Lister has received his reward; that all people of all nations of the civilized world have united to do him honor.

We have heard much in recent years about the advances made in medicine, and the greatly improved status of the profession; and yet it is difficult for the student of to-day to fully realize the truth of such statements. The following advertisement taken from a newspaper of Shakespeare's time will give us an idea of the position, social and otherwise, of a physician of that era:

> WANTED.
>
> In a family who have had bad health, a sober, steady person in the capacity of doctor, surgeon and man-midwife. He must occasionally act as butler and dress hair and wigs. He will be required sometimes to read prayers and preach a sermon every Sunday. A good salary will be given.

In those days the physician was generally depicted by writers (dramatists and others) as a cunning knave or an ignorant charlatan What a contrast is presented in considering the position of our profession to-day. The painter makes the physician a hero For instance, take Mr. Luke Fildes' picture, "The Doctor," which you have probably all seen. Mr. Mitchell Banks speaks about the original painting as follows: "Of the hundreds of medical men who must have stood before that picture I am sure there was not one whose pulses it did not quicken with pleasurable pride, or who left it without thinking that it already had been, and again would be, his privilege to fight against pain and suffering and death like his colleague on the canvas. For to us he is a real living man like ourselves We have acted like him and felt like him.

"Note where the scene of the picture is laid; not in some rich man's mansion, where the doctor might reasonably expect a handsome fee for his trouble, but in the workingman's cottage, where, most likely, the gratitude of the people and a consciousness of having done his duty by the poor will be his sole honorarium With admirable skill the painter has pitched on the early hour of morning for the time. The light of the lamp in the room and the light of the dawn coming through the casement are struggling with each other. It is the cold, sad hour when human vitality is the lowest, and when statistics tell us most men die. The sick child, worn with the raging fever, that commonly burns from eight in the evening till one or two in the morning, lies spent and exhausted. Till then the parents have been fighting on with their nursing, soothing and caressing, encouraging their little one. But now

they too are exhausted and depressed, and hoping against hope seems all that is left to them. And there sits their friend—the gentle doctor—watching with them, and still puzzling his brains to think what more he can devise to stay the lamp of life from flickering out. He is no courtly physician; no London specialist, that man, thank God He is only a country doctor. But his somewhat rugged face tells of honesty and common-sense, self-reliance and gentleness. What more do you want? The men that look like that man, whatever be their business, or trade, or profession, whatever be their wealth or their social position, I say, of such men is the kingdom of heaven."

Mr. Gladstone, some years before his death, spoke as follows about our profession: "And speaking of the body of the profession it is impossible for us not to notice the change, it is impossible for us not to see how far more strongly now than of old the medical man of to-day conforms to those general laws of common sense and prudence which are, after all, universal laws of human life in every one of its departments. It is impossible not to see his greater and more sustained earnestness of purpose, that elevated sense of the professional dignity, that desire to make it subservient to humanity, that general exaltation of his aim in the exercise of his profession."

This is a generous tribute to our profession from a personal point of view. From another distinguished British statesman we get kindly words as to the scientific side of the profession. Mr. Mitchell Banks tells us that a few years ago the Marquis of Salisbury went down to Oxford to plead for the Radcliffe Infirmary, and said, "I believe that if you respond munificently to the appeal that is made to you, you will do something more than place this Infirmary in a position of which it need not be ashamed; you will be taking a long step towards introducing more closely the cultivation of one of the greatest of sciences—the science of medicine—in this ancient university. I always think that science has scarcely received among us all the tribute it ought to receive among the sciences which rest upon observation. It is the most sober, the most absolute, the most positive among all the sciences. Again, there is no other science—which is but another name for a work of mercy—there is no other science that is so closely linked with the relief of human suffering as a remedy for human calamity in its most overwhelming form."

This, coming from a man who in his younger days was distinguished as a scientist, who in latter years kept himself fully in touch with every advancement in science, whose chief relaxation to-day is working in his chemical laboratory, is a magnificent tribute to our profession. Tell your parson, tell your lawyer, tell your funny friend when he gets off that old joke about doctors differing, that one of the most distinguished statesmen, who is at the same time one of the greatest scientists of the world, says positively that the science of medicine "is the most sober, the most absolute, the most positive among all the sciences"

The modern novelist delights to describe the doctor as Fildes has painted him. We all love such noble specimens of our order as George Ohnet's Le Docteur Rameau and Ian Maclaren's Doctor MacLure. I need go no futher in this direction as I have given sufficient evidence to prove that

where the doctor was despised two hundred years ago, he is respected and honored to-day.

If it be admitted that the public are, as a rule, well disposed to our profession, it may be well to consider what return we make to this same public for their kindly consideration. I will refer very briefly to this aspect of the question, but I may say that we try to replace the gross quackery and charlatanism of past ages by careful methods of investigation and general honesty of purpose. We are earnestly trying to place medicine on a scientific basis. We are endeavoring to do our duty both to our patients and the general public. We are not all heroes; but, as far as my experience and observation has served me, I have known very few physicians who have not done some kindly and generous acts in their professional career, and I have known many who have done numerous, generous and noble acts in a very quiet and unostentatious way. In fact, some good souls appear to form a habit of doing such things without knowing it.

How do members of the profession treat each other? Frequently, not very well, sometimes very ill—I am sorry to say. There is altogether too much mutual distrust and small minded jealousy in our ranks. I often think that we are apt to become big in great things, and small in little things. Let me refer first to the town only containing two doctors—Smith and Jones. The two physicians, working together in a profession that we are pleased to designate as a noble one, should be on the most friendly terms. It is in the interest of themselves, their patients, and their profession that such should be the case. And yet how frequently do we find that they are deadly enemies. Such enmity in such is really a calamity for both Smith and Jones, and also for the science of medicine in that town. Sometimes, instead of open enmity, there is an armed neutrality; that is a little more respectable, but scarcely less objectionable.

This sad condition of things is so common that it appears to me that we ought to continue to put forth some strenuous efforts to improve matters. What are the causes? Smith and Jones are both good and honest practitioners, we will suppose. The success of each must depend largely on his reputation. This is a truism which both fully appreciate and concerning which both are duly or unduly sensitive. The public are apt to put a relative valuation on our services. Smith and Jones may be equally good doctors, but a large portion of the community will refuse to think so, and a section will praise Smith at the expense of Jones. This is very unpleasant for Jones and he resents it. He hears that Smith has said something of an unfriendly nature about him. Some simple remark made by Smith is so terribly twisted and grossly exaggerated in the report given to Jones that the latter becomes very angry. If Jones asked Smith about the matter in nine cases out of ten the trouble would probably be settled amicably. I have only to say professional jealousy is not confined to small towns. In this city—Good Toronto—we have quite a sufficiency of the commodity.

I have not time to discuss in detail the means we should adopt to banish jealousy from our ranks, but I may say, in a general way, that we

should endeavor to see more of each other. There is no better way to do this than by attending the annual meetings of our Provincial and Dominion Medical Associations. A man like our able and genial friend, Dr. Harrison, of Selkirk, who always attends these meetings, is a broader and more generous man than Dr. Jones, of Selkirk (if there be such a man there) who never attends them. When we meet in groups of two or more we might be a little more charitable in speaking of absent ones. I heard, a short time ago, a friend of mine speak to a small group of doctors in Toronto who were talking about a physician, whom I will call Jones, in terms not altogether complimentary, as follows: "Why is it that you fellows never have anything nice to say about Jones? He has at least nine good points for one bad. Why can't you sometimes refer to some of the nine instead of eternally harping about the one?" I think it would be well for us to act on my friend's advice and cultivate more than we do that greatest of all virtues, charity, in criticising the characters and acts of our professional brethren. I have but little to say about our ethical codes which are intended to promote peace and brotherly love between us. They are well enough in a way and accomplish much good, but we must not rely too much on them because there never was and never will be devised a code which will make a crooked man straight.

I do not wish, however, to be considered a pessimist in this connection. As a matter of fact I am not. I love and respect my profession and my friends in that profession As I have frequently said to my student classes, our profession is a great and noble one in the sense that it gives us grand opportunities for good work in the interests of suffering humanity. If we work honestly and conscientiously, having regard to our duties to God and man, we will make the profession of medicine good, great and noble in the best sense of the words.

This country has produced many specimens of the better and higher type of physician. I will refer simply to one, James Elliot Graham, whom we hoped to have as our presiding officer at this meeting. He was the father of our Association in a sense, as he first conceived the idea of its establishment, and was one of the chief promoters of its organization. Dr. Graham was one of the greatest men and one of the most high-minded physicians that this country has produced. I think I can speak for the whole profession of Canada when I say that through his death this province and this medical Association have suffered an irreparable loss.

There has been, I think, no time in the history of this Association when its members were doing more in the interests of the public than now. Our Public Health Committee had an interview with the Hon. G. W. Ross and the Hon. J. R. Stratton during the last session, and asked the government to make some provision for the treatment of inebriates and dipsomaniacs. The Government had before that declined to do anything because of the expense, but when it was suggested that the probation system, as carried out in Massachusetts, was not expensive, the interviewing committee was asked to draft a bill to be introduced into Parliament. This was done, and the proposed bill was presented to the Premier. The bill did not, however, come before the House, although

I understand the members of the Government are favorably disposed towards an inexpensive scheme for benefiting this class of unfortunates. Dr. A. M. Rosebrugh, of Toronto, has for years taken a very active interest in the matter, and in his good work has been greatly assisted by Dr. Wm. Oldright. These gentlemen are very anxious to get all the help possible from members of this Association in the promotion of their good work.

Another extremely important matter is that relating to the prevention and cure of consumption and other forms of tuberculosis. The results at the Gravenhurst sanatorium, and at the sanatoria in various parts of the world, have been very gratifying. Largely through the exertions of Dr. E. G. Barrick, of Toronto, an association has been formed with the object of bringing proper facilities for the treatment of the poor who are suffering from this disease in Ontario. Through the efforts of this committee an admirable Act was passed at the last session of the Ontario Legislature providing for the establishment of sanatoria for consumptives by municipalities. I earnestly hope that fruition from Dr. Barrick's association will appear in the near future. I hope the profession of Ontario will make s me extra exertion to get the public interested in this subject. If the wealthy of our province can get some adequate conception of the enormous amount of good that can be accomplished by this crusade against the most terrible disease of civilization, they will not long withhold substantial assistance to Dr. Barrick and his noble band of co-workers, including, I am glad to say, a goodly number of charitable women. I can speak for you all, I think, when I wish them God speed.

We will have this afternoon a discussion on the most important question that has ever come before the profession of Canada, *i.e.*, Inter-Provincial Medical Regislation. Dr. Roddick has done a vast amount of good work in connection with the matter, as you know. I am very glad to be able to say that the profession in Ontario has commenced to realize the great importance of the new movement. I am very glad that Dr, Williams, and many other members, if not all the members of our Medical Council, are taking a very active interest in the matter. The largest of the provinces in our Dominion will have a great influence for good or evil in the settlement of the question. May I venture to hope that the representatives of Ontario will be broad and generous as well as just while carrying on negotiations with the representatives of the other provinces and the territories.

It is not a part of my duty to make the slightest reference to any debatable points in connection with the question; but, I may, perhaps, be allowed to refer to one phase respecting which there will be no difference of opinion. We all appreciate, now better than before, he fact that while we are physicians of Ontario we are citizens of Greater Britain, and we would like to have our professional status as broad as our citizenship. The little Englander of Canada is dead. We have buried him, and we are glad to have been at his funeral. *R. I. P.* These three letters represent Latin words. I don't give the words in full because I do not wish to put too much Latin into one address. Something—call it imperialism if you like—has heated our blood. We feel bigger than we

did a few months ago. We are sometimes seized with a delirium which is very peculiar from a psychological point of view. Take, for instance, that cyclone of good-natured lunacy which struck Toronto last Wednesday night and raged furiously for something like thirty hours.

In connection with these remarkable phenomena we, the profession of Ontario, feel that we are getting too large to be bounded by the Ottawa River on the east and the Lake of the Woods on the West. We want our Medical Parliament to do all in its power to set in motion the machinery to give our graduates a Dominion degree which will carry with it a license to practise in any part of the great empire of Greater Britain.

ELECTRICITY AND BRAIN POWER.

BY SIR JAMES GRANT, M.D., F.R.C.P. (LOND).

Consulting Physician General Hospital, Water St., and St. Lukes Hospital, Ottawa.

Professor Heger, of Brussels, in a paper presented at the International Congress of Physiology held at Cambridge, England, in August, 1899, stated that, "an important property of the cerebral nerve cell, is its variability in reaction, as regards its cell body, its processes and its epidendritic granules. Changes in all three portions may co-exist, or occur separately under different conditions, the further significance of which is important, *and demands investigation.*"†

The evolution of mental power being closely associated with healthy brain cell action and the activity of the neurons of the cerebral ganglionic centres, the following facts may be of interest, as evidence that defective mental activity unassociated with structural change, may be very materially improved, by the transmission through the brain of modified electric currents by the application of a neurotone

CASE No. 1.—(J.B.), aged 75 years, small stature, pulse and temperature normal, well formed and generally enjoys excellent health, until 1890, when after excessive horse exercise, in the mountains of British Columbia, he experienced a feeling of weariness and fatigue, followed gradually by weakness in his limbs, and considerable loss of power, in ordinary locomotion. Within the past four years, the steps became shorter and shorter, until he walked with considerable difficulty and uncertainty. No loss whatever of complete sensation in any part of the body, or evidence of paralysis, only defective muscular power, and a disposition to occasional slight involuntary escape of urine. Feby. 5th, 1900, placed under neurotone treatment every second day, consisting of applications to the spine, abdomen, limbs and sides of neck (parotid regions) and the free use of Parishes' food with general tonics. At present there is a marked change for the better in the entire system, of a progressive and gradual character. The face, which until recently was pale and exsanguine, has a much healthier appearance, the minute vessels having filled up, through increased assimilative action, in the alimentary canal, the result of electrical action and general muscular power so far improved, that he steps out with considerable ease and comfort. The patellar tendon reflex is perfect in the right leg, but slightly lessened in the left, no trouble from escape of urine. During the past year memory has been defective, so much so that usual business was conducted imperfectly. Within the past week memory was so far restored, could conduct usual official duties with comfort, facts, figures and general data causing little inconvenience, in fact the whole mental condition giving evidence of marked improvement.

The improvement in mental power under such circumstances is an

*Read before the Ottawa Medical Society, March 23, 1900.

†British Med. Journal, Sept. 2, 1899.

attractive feature which opens up a wide field for research, particularly when not dependent on any serious disease of the central nervous system. No indication of touch paralysis, such as first recorded by Wernicke of Germany. In the neurotone examination of the body I observed that the entire left side had a moderate diminution of sensation, compared with the right side, but as to muscular development and tonicity, no appreciable difference When first seen he could not stand on either leg which he now does with ease. Vision in both eyes perfect, and the other senses normal, and no history whatever of syphilis.

Within the past year I have been much impressed with the diagnostic importance of conditions in the line of anæsthesia, long anterior to loss of power, or the outcrop of paralysis. This is the period for active treatment, to ward off change of structure, and paralytic conditions, otherwise, almost certain to follow. With respect to anæsthesia such may be, either cerebral or spinal in its origin, and as Williamson of Owens College has pointed out, when there is loss of sensation, in cerebral disease, in a portion of a limb only, the boundary line of the anæsthesia, is more or less at right angles to the long axis of the limb, but in spinal diseases, when anæsthesia is in a portion of a limb only, the boundary line of anæsthesia runs more or less parallel with the long axis of the limb. Hemi-anæsthesia has been known to end abruptly in one limb, and by post-mortem examination found to be produced by lesions of the internal capsule at the *posterior third* of its *posterior segment.* The most remarkable result is the sudden termination of hemi-anæsthesia in hysteria, which is of exceptional character. In those cases where a patient feels generally out of sorts without being able to define any particular symptom, it is prudent to make a careful neurotone examination of the different regions as to anæsthesia, as I have found such to exist without any apparent systemic indication, and to prove most instructive, as to the line of treatment that should be followed.

Case No. 2.—Thermo-anæsthesia, of Four Months' Duration.

A. P. at 44 years—married and two of family, a farmer, well developed, weight 165 lbs., uniform and no particular change in years. Has usually enjoyed excellent health. Never used alcohol or tobacco, except an occasional chew Never experienced any accident, or injury to spine or head. No consumption in family. No indications of syphilis. Parents lived to a good old age, and father died of paralysis. Rests well at night and enjoys his food. Knee jerk, plantar reflex, and abdominal reflex perfect, also the superficial or skin reflexes generally normal. No evidence of the slightest loss of power in the affected parts, and sensation, as a whole perfect. No affection of the cranial nerves. Precisely the same reduction of temperature, fully one degree in left foot, as in the left hand. The grasp and other movements of the arms, are uniform, and in parts are equal in both sides. The optic discs are normal, co-ordinating power uniform. About four months ago experienced partial occasional numbness and coldness in left hand, and a sense of prickling in the same arm, also the same feeling of numbness and coldness in the left foot,

particularly the toes, ordered a "black draught," and Parishes' food with ferruginous tonics, saline sponging to spine and the body generally, and the free application of the neurotone to the chief ganglionic centres. Here is a case of well defined *thermo-anaesthesia*, without loss of sensation to tactile or painful impressions. It has been noted that in cases of lesion of the pons, there has been anæsthesia, to pain and temperature, on the side opposite to the lesion, while tactile sensation has been unaffected. In the present case, the existence of any cerebral disease, is not defined, even although there is evident localized reduction of temperature and tactile sensation retained. What the precise condition of the system which induces this evident local reduction of the temperature, is difficult to define. The recent remarkable discoveries regarding the structure of the nervous system, may doubtless throw new light, on many nervous phenomena, of health and diseases. M. Capitan of Paris, (La Nature, Nov. 25, 1899), states, that the nerve cell, once regarded as a small, polygonal mass, with prolongations at the angles, through the able investigations of Nissl, von Lenhossek, Ramon-y-Cajal, Golgi and Prof. Mathias Duval, as well as other active observers, have demonstrated, that this *actual simple nerve cell*, is complicated in other ways. In its structure, an *amorphous substance*, called *chromatin* in packed grains, and in which are distributed bundles of fibres, forming a net work of considerable regularity in the meshes of which are packed, the grains of this peculiar and interesting substance. From the cell arise a large number of prolongations in all directions, compared with the rootlets of a plant. These cell prolongations are not continuous, but simply approach each other, and possess contiguity, but not continuity. Thus we observe how recent histologic and biologic investigations, as to nervous structure, have made quite a revolution in our ideas, of this portion of the system. As to this particular case, in arriving at a diagnosis of the entire condition, it is well to bear in remembrance, that it is still a disputed point with physiologists, whether the so called motor area, has any sensory function, as great destruction of the motor cortex has been known to exist, without any sensory symptoms being produced, Dr. Williamson of Owens College, states in the Medical Chronicle, February, 1899. "I have seen cases of extensive destruction of the motor area of the cortex by tumour growths, (verified by autopsy) in which during life, I have not been able to detect any anæsthesia, and I have also found sensation normal, when the autopsy has revealed extensive softening of the motor area, of the cortex. Under such circumstances it is prudent to observe cautiously, treat carefully, and await practical results.

May 26th. This case has so far made a good recovery, temperature now being normal throughout.

150 Elgin St., March 23, 1900.

REMOVAL OF SEPTAL SPURS.—A NOTE UPON THE USE OF CARMALT-JONES SPOKESHAVE.*

BY D. J. GIBB WISHART.

Prof. of Laryngology and Rhinology, Trinity Medical College and Ontario Medical College for Women.

For the past two years, I have largely abandoned the use of the Bosworth nasal saw in the removal of those projections springing from the nasal septum, which present (a) the appearance of horns, such as occur usually far back in the nasal cavity, are bony in character, and impinge against a small area of the mucous covering of the inferior or middle turbinated surfaces; or (b) the appearance of shelves, usually more anterior in situation, partly cartilaginous and partly bony in character, and in length any where from one-quarter to one inch, and lying parallel or almost parallel to the floor of the inferior meatus.

I do not include here those spurs whose sides incline towards each other at an angle obtuse, or only slightly acute; nor again those spurs which are really deflections of the septum, the angle of the said deflection being sharply acute; nor, except in rare instances, any spur associated with the deflection of the septum. These call frequently for the saw operation.

In the classes of cases, a and b, however, the spurs lend themselves readily to the operation which I am about to describe, and after their removal, there is left a clean, flat, straight wound, which heals readily.

The modus operandi is as follows:

The parts are prepared by spraying with alkaline and antiseptic solution, preferably Nasal Plasma Solution; followed by the packing around the spur in its entire length of pledgets of aseptic cotton moistened with a solution containing cocaine 4 per cent; extract of supra—renal capsule, 10 per cent., and trikresol, 12 per cent. Care must be exercised that the under and posterior surfaces of the spur be treated, as well as those more easily reached. These pledgets are left in position for ten minutes, and removed, and if the parts are not sufficiently anaesthetised, renewed and replaced.

The patient is seated in the usual position for examination, the head supported firmly against the head rest by an assistant, and the parts are brought as fully into view as possible. I prefer at this stage to use Palmer's speculum, as it allows of a good view of the parts with a maximum of room for the handling of the instrument. The surgeon stands in front and to the right of his patient, and inserts the Spokeshave with the level of the cutting edge always turned towards the septum, passing it gently back over the spur, until it drops into the slot, and then pressing the blade as closely up to the septum as possible, by this means engaging the whole of the spur.

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* Read before the Ontario Medical Association June 7th 1900.

If the anaesthesia is efficient the above can be done leisurely, and a careful examination made to see that the blade is in place. This being ascertained, the surgeon places the left hand upon the forehead of the patient, and with the right hand draws the blade rapidly and directly, and firmly forwards, with sufficient force to overcome whatever resistance may be afforded by the bone or cartilage, and keeping the blade always parallel with and close to the septum The blade must be drawn through with one sweep, otherwise a jagged surface will be left, and when it is disengaged the spur will probably be found adhering to the mucous membrane of the septum by a small strip, just in front of its original situation. This must be snipped with scissors, and the spur removed.

The parts are then sprayed with an antiseptic, and dusted with xeroform, and the cavity filled with a narrow strip of alembroth gauze dipped in 5 per cent. solution of camphor-menthol and albolene. Healing results in a few days.

The bleeding is never extensive, owing to the action of the suprarenal extract, the wound is clean cut, and the surface if anything flatter than that obtained by the saw. In the saw operation, the hemorrhage frequently obstructs the view, and during the delay thus caused, the anasthesia has time to pass off, thus causing a further delay, which is trying to the courage of the patient.

In the introduction of the blade, difficulty will arise in two directions, first, in keeping the parts full in view, and, second, in passing it between the outer wall and the spur. To overcome this, the parts must be fully illuminated, and every endeavor made to keep the blade immediately under the eye of the operator, until it is finally placed in position. A thorough knowledge of the position and shape of the spur, and its relation to the outer wall must be obtained beforehand by the free use of cocaine and a probe, and this accomplished, the sense of touch will be a careful guide. The operator may then carefully force the blade over the apex of the obstruction without doing damage to the outer wall, but usually dexterity rather than force is required, to insinuate the blade along the winding path. The narrower the blade, the more easily will this be done, but even when the force used has been sufficient to fracture some part of the outer wall, the mucous membrane was not injured and no evil sequelae resulted.

The instrument used has been that manufactured by Stearns Bros. of London, and with the large square shaped fenestra.

The advantages which I would claim for this method of operation are:

1. Absence of bleeding till the operation is accomplished, with the advantage of non-obstruction to the vision.
2. Great saving of time in operating.
3. The almost entire absence of pain or fear to the patient.
4. The satisfactory course pursued in healing.

47 Grosvenor Street.

SELECTED ARTICLES.

THE INDICATIONS FOR SURGICAL INTERVENTION IN CASES OF APPENDICITIS.

I. *Given a case of appendicitis: What are absolute indications for operation?*

II. *Given another case of appendicitis: How do you recognize the favorable moment for surgical intervention?*

ROBERT ABBE, M.D., New York:

I. A first attack: If symptoms ameliorate after the initial vomiting, the pain is well localized over the appendix and the temperature does not rise after the first twenty-four hours, put on ice and delay operation until convalescence, provided the patient can be kept under close observation and within immediate reach of surgery.

If the case grows progressively worse for twenty-four hours operate promptly.

If the onset is severe, the pain in the abdomen intense and tenderness to touch marked, with vomiting, irritable ("snappy") pulse, and coated tongue, operate immediately, inasmuch as many of this class represent the gangrenous type from internal pressure by appendiceal concretions and retained putrid contents, and may by instant operation be caught before rupture, which usually follows twenty four hours after distention.

II. Any case which has passed the acute septic stage may be operated on in the interval, *i. e.*, before another attack. Delay of at least a week is usually wise, but three days will, as a rule, be ample.

G. E. ARMSTRONG, M.D., Montreal:

I. *a.* In acute appendicitis, when the pain, tenderness, vomiting, elevation of temperature, acceleration of pulse and the facial expression indicate clearly the nature of the disease and that the lesion is localized, operation is absolutely indicated unless improvement results from twelve to twenty-four hours of rest, with ice or hot fomentations locally.

b. If during a mild attack or in convalescence there is a sudden accession of pain and tenderness, particularly if the latter tends to become more widespread.

c. In a probably gangrenous appendicitis.

d. In perforating appendicitis.

e. When a persistent tender tumor mass is present.

f. When fluctuation indicates a pericecal abscess.

g. When chills and sweats indicate that absorption is going on, or that a septic pylephlebitis is developing, which may end an abscess of liver or spleen.

EDITORIAL NOTE.—In the following article the views of an equal number of clinicians and of surgeons are brought to bear upon those points in the management of appendicitis concerning which it is most important that clinicians and surgeons shall be agreed. The two questions submitted are printed immediately below.

h. Drainage in general septic peritonitis.

II. *a*. Localized appendicitis not readily yielding to other treatment.

b. A history of two or more attacks.

c. Persistence of soreness or a sense of something pulling after recovery.

REGINALD H. FITZ, M.D., Boston, Mass.:

My experience with acute appendicitis leads me to recognize, from the therapeutic point of view, two principal classes of cases. In the one, immediate operation is demanded as a life-saving measure; in the other, delay is advisable until it becomes obvious that the patient's condition calls for an operation to check the progress of the disease or to promote the healing of an abscess.

Immediate operation is called for the sudden onset of intense abdominal pain, and exquisite tenderness, in the region of the appendix is associated in the course of a few hours with a rapid pulse, elevated temperature, and retracted abdominal wall. The condition is indicative of a certain degree of shock, and the operation is likely to reveal a perforated appendix, or one whose wall is so gangrenous as to threaten early perforation.

In the second class of cases the initial pain and tenderness, though marked, are not intense. The pulse and temperature are elevated, the latter, perhaps, for a short time as high even as 103° F., or 104° F., and the abdomen is moderately distended and tympanitic There is a certain degree of deep-seated, circumscribed resistance in the region of the appendix. Such cases form the large majority of those seen by the physician, and tend towards resolution, spreading peritonitis, or abscess formation. Surgical intervention is inadvisable in this group of cases until the progress of the disease indicates which of these directions is to be taken.

In the course of three or four days the symptoms fade away if resolution is to follow, and no operation is then expedient.

A spreading peritonitis is indicated by persistent elevation of the pulse and temperature, by increasing abdominal enlargement, and by an extension of the initial pain and tenderness from the region of the appendix towards the median line of the abdomen, the liver, or into the pelvis. Surgical intervention is then desirable to accelerate recovery and to diminish the risk of a sudden change for the worse.

If the inflammatory signs remain sharply defined in the region of the appendix, perhaps to be determined only by pelvic examination, and the symptoms are so mild as not to call for an operation on the third or fourth day, an abscess is to be suspected, especially when there is a sharply-defined and tender tumor in the right iliac fossa, slowly increasing. it may be, in size. An operation is then demanded to drain the abscess likely to be found, and to prevent its rupture into the intestine, bladder, peritoneal cavity, or through the abdominal wall. A more remote contingency in such cases, when an operation is too long delayed, although the pus may largely be absorbed, is that a pylephlebitis, with hepatic abscess may ensue.

If the patient readily recovers from the first attack of appendicitis without the necessity of an operation, a second attack is likely to occur

only in about one-half of the cases. An operation to prevent this possibility is therefore unnecessary in the above proportion. In about four-fifths of the cases in which a second attack is suffered it occurs within a year from the original illness. To avoid an unnecessary operation in one-half of the patients, therefore, it seems desirable to wait and see if a second attack is to be suffered. If so, it is to be treated as in the first instance.

If successive mild attacks continue, the appendix should be removed when the patient is so long freed from symptoms as to indicate a quiescent state of the pathological structure.

There are conditions which make expedient an early operation even in mild cases of appendicitis. These are, first, remoteness of the patient from the easy and rapid access of skilled surgical aid; second, such occupation as exposes him to unusual violence or requires him to take long journeys, especially to distant parts; third, exceptional timidity of the part of the patient which makes life burdensome through undue anxiety as to his future welfare.

These are offered as general considerations, covering the large majority of cases, realizing, however, that there is no rule without its exceptions, and that each group of cases may contain such as to make an immediate operation expedient or inexpedient.

The physician should give each patient a chance to recover from the immediate attack without an operation, since the great majority of attacks are mild, and since the least risk from operation, if it is to be performed, is taken when the appendix is removed while there are no symptoms of appendicitis. At the same time his patient should be repeatedly seen at short intervals during the progress of an attack, lest a change for the worse, which may occur within a few hours, is allowed to continue.

DR. R. KOCHER, Berne, Switzerland:

I. I have no doubt that most lives would be saved if a radical operation were performed in every case of appendicitis in the first hours or on the first day of the appearance of symptoms.

Given the fact that for most cases of appendicitis surgical intervention is *only called for* after two or three days, I find absolute indications for operation (1) when, after that time, fever presents still a continuous or only slightly remittent type, or when the pulse is quickening and symptoms of general intoxication begin to set in; (2) when an abscess has formed which is increasing and is combined with progressing local inflammation.

II. The most favorable moment for surgical interference in acute appendicitis is when a circumscribed abscess has formed, and the interference which has proved the best for me in recent years is the opening of the abscess at the point where we can get into it without opening the free peritoneal cavity. But then, according to a note which has just been sent for publication in the *Correspondenzblatt für Schweitzer Aerzte*, we have found it best to perform the radical operation *after a few days*, sometimes even after twenty-four hours, by typical incision at the place of election, with opening the peritoneal cavity and performing resection of the appendix, without touching the wound opening in the abscess cavity, which

is left to heal by granulation as in other abscesses, whilst the wound opening the peritoneum is closed at once

For patients who have gone through the acute stage with or without opening of abscess the best moment for surgical interference has arrived when every symptom of local inflammation and of general reaction is over and when the radical operation can be done in the form called by Roux and Lausanne "*Resection au froid.*" We find the indications for this operation in every case where a local induration or sensitiveness of the appendix is left after a perityphlitis, and think it wise to do it whenever a patient wishes to be guaranteed against relapse.

ROBERT T. MORRIS, M.D., New York, N. Y.:

I. Given a case of *progressing* appendicitis, the absolute indications for operation are any symptoms which ensure the correctness of the diagnosis.

This opinion assumes that the patient is within reach of a surgeon whose records prove his ability to operate at any stage in the progress of the disease, and to make the death-rate, the suffering-rate and the loss-of-time-rate less than can reasonably be expected under other forms of treatment.

This opinion further assumes that the case is within natural surgical limitations. For instance, if the patient has far advanced diabetes mellitus or post-compensatory dilitation of the heart in association with an attack of appendicitis, I would forsake my rule to "operate as soon as the diagnosis of appendicitis has been made," and would resort to consultation with authorities who were competent to estimate the comparative danger between operation, on the one hand, and, on the other hand, neglect of the focus of infection.

II. Given a case of *retrogressing* appendicitis, I would again recognize the favorable moment for operation as the moment when the diagnosis was made.

This opinion assumes that the patient is within reach of a surgeon who has proven his ability to make the operative death-rate, suffering-rate and loss-of-time-rate less than it would be from mesenteric thrombosis, portal embolism, pylephlebitis, iliac phlebitis, dangerous peritoneal adhesions, and other late sequelae of infective appendicitis.

This opinion also assumes that the case is otherwise within natural surgical limitations.

Both of the opinions given in answer to questions I and II assume that the surgeon intends to work for the best interests of the patient, and not for the protection of his own reputation, or for the speculative effect of his action upon the sentiments of the community.

HERMAN MYNTER, M.D., Buffalo, N. Y.:

I. I look upon appendicitis as an exclusively surgical lesion. I do not deny that numerous cases recover under so-called medical treatment, but I maintain that they recover in spite of medical treatment, by the

healing power of nature. Twenty per cent. of all cases are serious, and the mortality under any kind of medical treatment is about 20 per cent., which means that almost all the serious cases die. It is, however, the height of absurdity to compute the mortality in appendicitis from all cases. It is as absurd as if we would compute the mortality of the radical operation for hernia from all operations for hernia. If in 100 operations for hernia, all performed after Basini's method, there were twenty with gangrene from strangulation, and these twenty died, then nobody would state that Basini's operation had a mortality of 20 per cent. But that is just what is done in appendicitis, particularly by physicians. They state that under medical treatment there is a mortality of 15 or 20 per cent. in all cases, while the truth is that the 80 per cent. which recover are the light cases, which would recover under any treatment, or without any other treatment than rest in bed and diet. The 20 per cent. of fatal cases are the serious cases with perforation, gangrene, and peritonitis, local or diffuse.

In Denmark, all cases of appendicitis are still treated almost exclusively with opium, and their statistics are convincing of the utter worthlessness of that treatment. In the diffuse cases Professor With had a mortality of 100 per cent., Floystrup 100 per cent. in the diffuse cases and 37 per cent. in cases with local abscess, and Mcnrad had 100 per cent. mortality.

We must classify our cases, and we will find that operations performed inside twenty-four or thirty-six hours have a very low mortality, as low as in interval cases, and that whether they are localized, gangrenous or perforating, while the mortality in the diffuse cases increase gradually with every day's delay in operating, till it reaches 67 per cent. on tenth day.

The pathological changes in a slowly-progressing appendicitis are similar to those in other tubes (such as urethra, Fallopian tubes, gall ducts): shedding of epithelium, formation of granulation tissue, cicatricial retraction, *stricture*, stasis with dilatation, hydrops, empyema, coprolites, necrosis, gangrene, perforation, peritonitis. Infection with the colon bacillus, however, may at any time and at any point lead to total gangrene, with rapidly fatal peritonitis. Perfect recovery after a serious attack occurs only after destruction of the appendix during a local abscess, and then independent of any known medical treatment, or else by the formation of an appendicitis obliterans. This form, however, may keep the patient in a state of chronic invalidism, with symptoms of nervous dyspepsia.

In cases of septic lymphangitis the appendix may macroscopically appear normal, but the microscope will show colonies of bacilli in the wall. This form is accompanied with symptoms of septic infection, such as somnolence, profuse perspiration, general malaise, high temperature, small, rapid pulse, pain in ilio-cecal region, followed by rapidly fatal peritonitis.

What, then, are absolute indications for operation?

1. All cases which are from the onset acute, with pain, vomiting, increased temperature, frequent pulse, muscular retraction, and in which

no improvement occurs inside twenty-four or thirty-six hours. If the pulse increases to 110 and 120, and keeps there, or goes higher, operate at once.

2. In cases of septic lymphangitis, operate at once.

3. In cases of localized, circumscribed abscesses, make laparotomy, and extirpate if seen before fifth day. Incise and drain if seen from fifth day till tenth day, or later, but leave the appendix alone, unless easily found and removed.

4. In cases of diffuse peritonitis, with costal respiration, meteorism, fecal vomiting, and rapid, weak pulse, operate, unless patient is in extremis; drain both flanks and pelvic cavity. Operation offers the only chance, even though a poor one.

5. In chronic and tuberculous cases, with invalidism.

II. I do not recognize any moment as being more favorable for surgical intervention than any other, save the early one.

An operation performed inside twenty-four hours or thirty-six hours is as devoid of danger as an operation in the interval, but in cases of septic lymphangitis and sudden gangrene even this moment may be too late. The more severe the pain and the constitutional symptoms the more urgent is immediate operation, provided the patient is not in a state of profound shock. Surgery ought not to be held responsible for those cases which come too late to operation, with well-developed diffuse peritonitis.

FREDERICK A. PACKARD, M.D., Philadelphia, Pa.:

I. Persistent pain and tenderness in the right iliac fossa after the application of an ice bag, and thorough evacuation of the bowels. Local signs more marked than slight pain (spontaneous), and tenderness on deep pressure in the region of the appendix. The existence of increased resistance (not rectus rigidity), fullness or dullness means that the case has passed from the realm of medicine to that of surgery, and requires constant surgical supervision, if not immediate operation.

II. I consider that the favorable moment for surgical intervention occurs when it is evident that the case is not one of those that can be relieved permanently by the local application of ice to the right iliac fossa, and free purgation, with divided doses of calomel. Where amelioration does not promptly follow these measures (or even with a false improvement from the use of narcatics, but increasing physical signs), I believe that the sooner the appendix is removed the better. I would recognize it by persisting pain or tenderness in the iliac fossa, or by bulging, dullness, or superficial edema in that region. After these are present I see nothing but danger in delay.

ROSWELL PARK, M D., Buffalo, N. Y.:

I. Rising pulse-rate, rising temperature or subnormal temperature, increasing tumor or abdominal rigidity, intense pain, septic appearance (sordese, typhoid tongue, etc.), leucocytosis, symptoms of obstruction of the bowels, peritonitis, or increasing distension; these are the principal indications for operation, not one of which the surgeon can afford to disregard.

II. To recognize the favorable moment for operation is not always possible, nor for the surgeon even frequently so, since he is often called in after this moment has long passed. *The* favorable time is either the earliest possible, after recognition of the features previously mentioned, or else after a fairly well walled-off abscess has permitted one to feel that he may content himself with simple incision, evacuation of pus, and resting there till the time has come for an interval operation.

NICHOLAS SENN, M.D., Chicago, Ill.:

I. Absolute indications for operation are perforation and gangrene. In acute cases an early operation, that is, within forty-eight hours, is imperative, when the symptoms point to progressive peritonitis.

II. In relapsing appendicitis the time of choice for operation is during the interval between the second and third, or later attacks. In acute cases, after abscess formation has taken place, the operation is directed largely toward the treatment of the abscess, and the appendix is only removed when such a procedure does not add to the danger of the operation.—*Maryland Medical Journal.*

WHEN SHALL THE UTERUS BE DOUCHED AND HOW SHALL IT BE DONE.

By EDWARD P. DAVIS, A.M., M.D.,

Professor of Obstetrics, Jefferson Medical College, Professor of Obstetrics and Diseases of Infancy, Philadelphia Polyclinic ; Visiting Obstetrician to the Jefferson, Philadelphia and Polyclinic Hospitals, etc.

Two important considerations warn us against interfering with the uterine cavity during or after labor. The first is the danger that by so doing we may infect the tissues, and the second is our desire to avoid hæmorrhage, either through the detachment of the placenta or after labor through interference with the thrombi which close the sinuses of the womb. There must be a definite indication and a danger greater than the risks of interference to justify the invasion of the uterine cavity.

As regards the risk of infection, it would seem a simple matter to so sterilize a douche-tube or other instrument that it would do the uterine cavity no harm. The difficulty does not lie with the douche-tube or instrument ; it is with the circumstances under which it may be introduced. In many obstetric cases, the attending physician has no sterilizing apparatus at hand and depends upon boiling his instruments in domestic utensils to secure asepsis. The vagina is a cavity so situated as to be readily contaminated and made sterile with the greatest difficulty, and a douche-tube or instrument must first pass through this channel to reach the uterus. In obstetric cases in private house, insufficient help and the lack of asceptic appliances make the practice of asepsis difficult. It is not then strange that careful practitioners avoid the invasion of the uterine cavity during and after labor so far as possible.

The risk of hæmorrhage following the use of the douche-tube or instrument exists principally in those cases in which the uterus is empty and in which uterine contractions are deficient and the womb remains enlarged and flabby after labor. In highly nervous patients with such conditions, any interference with the uterus occurring after labor may be followed by hæmorrhage. In some septic cases, intra-uterine manipulation may be followed by severe bleeding, occasioned by relaxation of the womb and by disturbance of its thrombi. With these considerations, we may appreciate the fact that careful precautions must be taken to render the introduction of a douche-tube or instrument within the parturient uterus a safe procedure.

The indications of an intra-uterine douche are precisely those conditions which are at the same time its dangers, namely, septic infection and hæmorrhage.

In the former, it seems rational to remove from the uteris retained and decomposing blood-clot, placental tissue, membranes or purulent secretion and bacteria. In cases which proceed normally, the uteris drains itself after labor by its intermittent contractions, and its cavity being asceptic, the lochial discharge is removed with sufficient thoroughness.

When, however, infection is present, the contractions of the womb are less active, its walls are relaxed, the lochial discharge is retained and partially absorbed, and the patient undergoes a gradual auto-intoxication. When the womb is infected, as shown by an abnormal lochial discharge or a lack of the normal discharge with fever and rapid pulse, the indication is clear to thoroughly cleanse the interior of the womb.

This may be done by the use of a stream of sterile fluid or by the use of dilute antiseptic solutions. In all cases in which the patient is profoundly depressed and has suffered from loss of blood, it is well to employ normal salt solution rather than one of the carbolic derivatives. Mercurial solutions should not be used within the uterus. The danger of absorption of mercural poison is sufficient to warn us against their employment. For the first cleansing of the uterus a thorough exploration of its cavity is necessary, as well as a douche. The finger may be employed for this purpose, although it will rarely be sufficiently long to accomplish the result thoroughly. In our experience it is much better to employ a douche curette, thoroughly but gently exploring the uterine cavity and douching it at the same time. This proceedure rarely requires the use of an anæsthetic. It is but little painful, and is seldom followed by much disturbance. The external parts and the vagina must be made asceptic before the uterine cavity is entered, and the patient may be conveniently placed across her bed, her hips projecting slightly over its edge. By attaching a fountain syringe to the curette a copious douche may be given. From one to two gallons of fluid may be used to advantage. In septic cases, we prefer not to employ a sharp-edged instrument, nor to use forcible curetting, as we wish to interfere as little as possible with the zone of resistance in the uterine tissue and with the thrombi closing its sinuses.

In septic cases, after the womb has been curetted as described, the physician may desire to give intra-uterine douching a further trial, and then he may employ a douch tube. This instrument should be as simple as possible in its construction, capable of being thoroughly sterilized, and large enough to give a free flow of fluid and a prompt and ready return. To fulfill these indications, we have long since abandoned the use of all forms of douche-tubes except the glass tube, and occasionally a hard-rubber tube. For our use, we have had made a tube of specially strong glass, having a groove along the distal portion of its under surface. There is no aperture in the tip of the tube, and it possesses but a single curve along which are holes, which permit the passage of the fluid. The groove serves sufficiently as a channel for the return flow. This tube may readily be boiled, and has given uniform satisfaction. For sterilizing it and also the curettes employed, we use pans of simple construction and convenient size.

Intra-uterine douching has long been considered an efficient means of treatment in post partum hæmorrhage. In this emergency it is not always easy to maintain aseptic precautions. It is better to be prepared for hæmorrhage before it occurs than to run the risk of infecting the uterine cavity through a lack of preparation. It is our practice in all cases of labor to sterilize the glass douche-tube and to have ready a sufficient supply of sterile or antiseptic fluid to enable us to thoroughly douche the uterus should bleeding occur during labor or soon after its completion. The question naturally arises, by douching the uterus, which is relaxed

after the delivery of the child, shall we not remove clots which have formed as plugs to close the sinuses of the uterus? The old teaching was to turn out the large clot, and this we believe to have been correct. A stream of hot fluid will not remove the clots within the sinuses of the uterus, while a considerable mass of coagulum must be removed if the uterus is to contract properly. Intra-uterine douching for hæmorrhage is most successful when followed by an intra-uterine tampon of iodiform or sterile gauze. The two in combination empty the womb and make it impossible for a large clot again to form, while stimulating the uterus to contraction.

If a suspicion arises that a portion of placenta or membranes has been retained within the uterus, and that hæmorrhage results from this cause, the douche-curette should be employed. An exuberant endometrium and decidua may give rise to hæmorrhage, which is best controlled by curetting and douching. The disturbance which follows this slight operation is more than compensated for by the stimulating effects of the hot intra-uterine fluid and by the pressure which the gauze makes if it is found necessary to apply it.

Cases are occasionally seen where sepsis and hæmorrhage are combined. In these patients, the infection has proceeded to such an extent that the blood is profoundly altered, and its coagulating power greatly reduced. Cases of incomplete abortion complicated by septic infection are sometimes among this class. In these patients, prolonged douching and intra-uterine manipulation must be avoided, The use of an anæsthetic is dangerous. While it is proper to douche and cleanse the uterus, this should be done as rapidly and gently as possible, the cavity firmly packed with gauze, and the patient stimulated in the most active manner. Such cases are occasionally lost through failure to rapidly perform the necessary manipulations.

When labor must be terminated by the introduction of the hand or of an instrument within the uterine cavity, and when the patient is to some extent exhausted, so that the contractile force of the uterus is lessened, we believe it to be safest and best to expedite the removal of the placenta by expression, to thoroughly douche the uterine cavity with sterile water, normal salt solution, or 1 per cent. lysol at 110° F., and should a tendency to relaxation of the uterus be feared, to conclude the douching by an intra-uterine tamponade of iodoform gauze. When this is removed the uterus should again be thoroughly flushed with one of the liquids named No further intra-uterine or vaginal douches in our experience have been required after this treatment.

In hæmorrhage, we have seen excellent results follow an intra-uterine douche given as already described. In septic infection we have seen the best results from thoroughly curetting and douching the uterus so soon as the patient has foul lochia and evidences of uterine infection. In a few cases, a second uterine douche has seemed advantageous. We do not believe it wise to give repeated intra-uterine douches.

At each case of confinement there should be used a simple sterilizer in which the instruments of the obstetrician may be boiled. A suitable tube for douching the uterus should be in readiness at each case. Its use, however should be very carefully limited in our judgment to the indications given.—*Journal of Obstetrics and Gynecology.*

THE PAST YEAR'S ADVANCES IN MEDICINE AND SURGERY.

The *Medical News* says editorially under this caption that one of the striking features of the past year is the position that surgery has taken in the treatment of diseases of the gall-bladder and gall-ducts. These affections have been wont to run a most uncertain and unsatisfactory course under medicinal management, and it has now become clear that early operative intervention is destined to take them out of the physicians hands Expectant treatment for gall stones, once it has become manifest that the attacks of pain are recurring, will soon be a thing of the past. In the treatment of intestinal obstruction and intussusception surgery has also asserted itself, and operation within the first twenty-four hours after diagnosis, or as soon as it is clear that medical measures fail to give relief, is henceforth to be the indication. In cases of typhoid perforation, operative interference as soon as the diagnosis is established has been emphasized, during the past year as the only justifiable rule of procedure. Two successful methods of treatment seem worthy of particular mention in the review of the year. Pagenstecher reported a case of stab wound of the left ventricle of the heart, in which, twenty-four hours after its infliction, he successfully inserted four sutures. The three deep sutures penetrated the entire thickness of the heart muscle, leaving only the endocardium intact. It was with the greatest difficulty that the uppermost suture could be inserted, because its site was not visible except when the heart raised itself up and twisted on its axis during systole. The manipulations necessary for the insertion of the sutures did not perceptibly disturb the heart's rhythm or action. This is the tenth case of active surgical interference in wounds of the heart, and six of them have been successful. The mortality of these cases under expectant treatment was from eighty to ninety per cent. The second notable success was the cure of volvulus, with all the classical symptoms of that affection, by the simple method of having the patient, while maintaining as near as possible a horizontal position, roll over in bed. The attempt to turn, if made in the direction of the twist in the intestine, is followed by immediate increase of pain, while even a partial turn in the opposite direction brings relief, and several turns untwist the ileus completely, with absolute cessation of symptoms.

In medicine the notable event of the year has been the definite determination that a special form of mosquito is the host and the carrier of malarial infection. It is evident that the discoveries in this line are soon to bear abundant fruit in the prophylaxis against the disease and its ultimate eradication from infected regions. In general the advance of civilized nations into the tropics has led to a great increase of knowledge of tropical diseases. England and Germany, as well as our own country, have taken a commendable interest in this work, and it is

evident that the question of the habitability of the tropics by white men is soon to be settled in the affirmative. Progress in general medicine has been more along the line of better appreciation of details than distinguished by any single noteworthy advance. Improvements even in such old-fashioned diagnostic methods as inspection and palpation are not wanting.

The shadow that the diaphragm makes on the chest wall of thin people and the corresponding shadow of the abdomen made by a dilated and partially filled stomach, under similar conditions, have become significant features of physical diagnosis. The percussion of the vertebral spine is now made to convey valuable information for the solution of such difficult diagnostic problems as aneurisms, enlargement of the intrathoracic glands, and mediastinal tumors. The vertebræ act excellently as plexímeters. The use of certain organs, as the spleen and liver, as plexímeters in percussion, to elicit information from beneath them, has also developed, and promises to be of value.

In some directions physicians have been undoing the work of too hasty conclusions. The resistive vitality of the individual rather than the virulence of microbes is now recognized as the determining factor in the course of disease. The claims of discoverers of the specific germ of rheumatism have brought out more clearly than ever that in even simple acute rheumatism there is present not a single entity, but a series of pathological conditions due to many causes. The fact that contributions of the great body of the profession, rather than that of a single genius, have influenced medicine during the past year is a matter for congratulation. It is well known that gradual progress made all along the line is more effective in permanent advance than sudden bounds, which are apt to overleap the mark, leaving the future to discount unwarranted assumptions.—*Therapeutic Gazette.*

DIFFUSE SEPTIC PERITONITIS.

A very valuable article on this important subject by Dr. George R. Fowler (*New York Medical Record*, April 14th, 1900), deserves to be widely read. It is written with special reference to treatment by elevating the patient's head and trunk, so as to facilitate drainage into the pelvis. The author points out that the peritoneum is virtually an enormous lymph sac, and therefore peritonitis is lymphangitis. The absorbents of the peritoneum are represented by the lymphatics, and the protection which these afford against infecting agents by exudative material thrown out (thrombo-lymphangitis) to act as a defensive barrier by blocking the lymph channels serves to preserve the life of the subject, on the one hand; while a failure in this respect, either because of the enormous and overwhelmingly rapid increase of septic material and the large size and number of channels necessary to destroy or obstruct, on the other hand, permits the destruction of the organism.

The region of the peritoneum possessed of the highest physiological power of absorption is that of the diaphragm, where large lymph trunks are present, the open mouths or stomata of which stand ready to take up and transport to the system at large whatever fluid with its contained pus, blood, bacteria, or toxic products of the latter may present itself.

The region in which the anatomical conditions favoring rapid absorption exist in the next highest degree is the intestinal. Here there likewise exist large lymph trunks and stomata, but not to the same extent as are found in the region of the diaphragm. These are, however, sufficiently numerous to render this region a dangerous area of absorption.

In the remaining region, namely, the pelvic, the non-absorptive character of the peritoneum is apparent. Microscopical study of this portion of the peritoneum reveals the fact that, while it is rich in capillary lymphatics, large lymph trunks and stomata are comparatively absent. The smaller lymph vessels of this region become much more rapidly obstructed, and hence absorption from this region proceeds very slowly, and finally ceases altogether, the arrest being coincident with plugging of the capillary lymph vessels with lymph thrombi, the result of infection and consequent inflammation of the lymph vessels themselves, aided by pressure from without, the latter resulting from peri- and paralymphangitis. This cessation exists until the toxic properties of the contents of the pelvic cavity are either destroyed or neutralized, when absorption is resumed through some, but not all, of the vessels. Many of the latter remain permanently closed. The latter circumstances correspond to the clinical fact that in some patients many attacks of pelvic peritonitis result in the formation of chronic exudates, due to the inability on the part of the absorbents to remove the latter, at least for a long time.

As a practical clinical fact, it has long been noted by surgeons that

septic inflammatory processes, when confined to the most dependent portion of the peritoneal cavity, remain quiescent and without urgent symptoms for a long time, as compared with a like condition of affairs existing in that portion of the peritoneal cavity situated above the pelvis. In other words, the peritoneum in this region is possessed of qualities which enable it, first, to resist infection; second, to limit the infection within its own area when it does occur, and third, either so to modify the virulence of the infection or to resist the absorption of its toxic products as to prevent, in the great majority of cases, the grave constitutional symptoms characteristic of an equally extensive infection of the peritoneum above the pelvis.

The author reasoned, therefore, that in cases of septic peritonitis, from whatever cause this might arise, it ought to be advantageous to so raise the patient's trunk that all peritoneal exudations might drain downwards into the pelvis; in other words that the absorption of these exudations might be prevented as far as possible.

In practice he has found that it is needful to insist that the elevation of the bed from the horizontal shall be at least from twelve to fifteen inches. In order to prevent the patient from sliding down in the bed, a large pillow is placed folded beneath the flexed knees, and upon this the buttocks rest. The pillow is prevented from sliding by a piece of stout bandage passed through at the folded portion and secured to the sides of the bedstead.

The author quotes nine cases in which this treatment was followed by recovery. Of these, the following is typical and highly instructive:—

October 23rd, 1899, Brooklyn Hospital The patient presented the typical clinical picture of diffuse septic peritonitis, with a history pointing to perforative appendicitis as the cause. No hope was held out for recovery, and I hesitated about operating at all. The operation revealed a perforated appendix lying free in the peritoneal cavity and a large quantity of foul-smelling sero-pus. The abdominal cavity was flushed with the peroxide of hydrogen and bicarbonate of sodium solutions, finally washed away with decinormal saline solution. The abdominal cavity was dried out, and combined glass and wicking drains were placed in the pelvis.

The patient steadily improved and recovered.

[It would be difficult to exaggerate the value of this method, based as it is on a common-sense adaptation of physiological facts. But it may be pointed out that it would be equally valuable in all cases of peritonitis, and especially after all cases of abdominal section In the latter cases, however, I should regard it as advisable to lower the bed to the floor on the second, or at most on the third day, because of the undoubted liability of some patients to the occurrence of phlebitis of the lower limbs after an abdominal operation.]—*The Medical Times and Hospital Gazette.*

THE TREATMENT OF ANEURISM BY SUBCUTANEOUS GELATIN INJECTIONS.

FUTCHER (*Journal of the American Medical Association*, Jan. 27, 1900), in an article on the treatment and cure of aneurisms, states that the credit of having introduced this method to the medical profession is due to Lancereaux, of Paris, who gives the following directions for the making of gelatin solution and the giving of the injections: The solution is made by dissolving four or five grammes of white gelatin in 200 cubic centimeters of 0.7-per-cent. sodium chloride solution, and sterilizing thoroughly at 120° C. The flasks are kept for several days at a temperature of 38° C., and any in which the gelatin becomes turbid or fails to harden in the cold are discarded.

For giving the injections he uses a 500 cubic centimeter sterilized flask, with a tight-fitting rubber stopper through which two glass tubes pass. One of the glass tubes extends to the bottom of the flask, and is connected by rubber tubing with a proper sized needle. To the other short glass tube a stiff rubber inflating bulb is attached. In order to purify the air a glass bulb filled with absorbent cotton is interposed between the rubber bulb and the flask. The temperature of the gelatin solution must be 37.6°. According to Lancereaux no pain should be produced by the injections. With proper asepsis and antisepsis there should be no general or local reaction. After the injection the patient should have absolute rest, and palpation of the aneurism must be avoided. The injections are made at intervals varying from two to fifteen days. Lancereaux thinks that best results are obtained by giving them every sixth to eighth day. He states that, generally speaking, ten, fifteen or twenty injections are necessary to effect a cure. He advises injecting the gelatin solution into the subcutaneous tissue of the thigh, and never into or in the vicinity of the aneurismal sac.

Huchard emphasized the importance of aneurism patients taking the proper sort of diet. An essential point in the treatment is the lessening of the arterial tension. For this reason all sorts of food which tend to produce toxins which have a vasoconstrictor action must be avoided. Bouillon, fat soups, meat, fish, particularly sea fish, and cheese must not form a part of the patient's dietary. Alcohol, tea, coffee, and tobacco are also forbidden. A strict milk diet is preferable, but fruits and leguminous foods may also be permitted. Drugs which cause a dilatation of the blood-vessels, such as iodides and nitrites, are also useful.

Futcher states that the following conclusions may be drawn from his experience with the gelatin treatment:

1. In not a single instance has the aneurism been cured, although in one case the abdominal aneurism has diminished considerably in size and the case is still under treatment.

2. In seven of his nine cases there was an appreciable diminution in the subjective symptoms referable to the pressure of the aneurism.

3. It seems quite certain that the subcutaneous injection of gelatin solution does materially increase the coagulability of the blood.

4. Contrary to the statement of Lancereaux, we have found that the gelatin injections are frequently very painful to the patient, the pain lasting and being most intense often as late as six hours after the injection.

5. Although Lancereaux states that with strict antiseptic and aseptic precautions there should be no elevation of temperature we have found the contrary. In several instances the injections were followed, two to four hours later, by a distinct chill, with an elevation of temperature reaching at times as high as 103° F. In no case was there any local suppuration, and in only one case was there any local reaction.

6. Notwithstanding the fact that there is not yet a case which can be reported as cured, there is some merit in the treatment, and it deserves a further trial.—*Therapeutic Gazette.*

THE SYSTEMTIC TREATMENT OF ECLAMPSIA BY CHLOROFORM AND CHLORAL.

Taken as a whole, the literature of eclampsia forms one of the most unsatisfactory chapters in the history of obstetrics. Conflicting ideas as to etiology and pathology lead, naturally, to the present conflicting ideas as to treatment, and to contradictory and bewildering statistics as to result. Perhaps, after all, the practical obstetrician need not feel that he is worthy of too great reproach for his inability to find a satisfactory treatment for a condition whose every-day phenomena are still unsolved riddles to the physiologist and the pathologist. When our laboratory scholars have agreed upon a theory as to the origin and life history of urea, perhaps we shall approach the solution of this perplexing problem. It is not our purpose, however, to discuss here the treatment of eclampsia in general, but rather to refer to one phase of the subject with reference to which there is substantial agreement among recent writers. In the treatment of eclampsia, as elsewhere, it should be the aim of the physician, if he can not always do good, at least to avoid doing harm. And it is safe to assert that in the treatment of eclampsia in the past this rule has been honored in the breach rather than in the observance.

Which one of us, even if strong and in good health, would like to be subjected to the prolonged chloral and chloroform narcosis, happily not practiced as much as formerly, but still too much in vogue. If there is one thing in connection with the treatment of eclampsia, about which modern authorities are beginning to agree, it is the folly and danger of this kind of treatment.

It is significant enough that Ohlshausen and Veit, in the last editions of their work, while strongly advocating the use of morphia, and not advising the use of either chloroform or ether (except, of course, in operative procedures), admit the superior safety of ether.

Still more striking is the fact that such keen observers as Ahlfeld while holding diametrically opposite views as to the induction of labor and the operative treatment, unite in proclaiming the danger of prolonged chloroform narcosis. "It increases the tendency to death," says Smyly, as the result of many years observation at the Rotunda. Fritsch, too, in a recent summary concludes that many deaths have been caused by this kind of treatment in cases which might otherwise have recovered.

The employment of anesthesia in the various obstetrical operations which may form part of the treatment of eclampsia is, of course, indispensable, but its long continued use, simply for the purpose of suppressing the convulsions, is a source of danger both to mother and child.

Even in operative procedures we should not relax our vigilance. Dührssen has called attention to the occasional occurrence of sudden death at the very beginning of chloroform narcosis in cases of eclampsia with much uterine distension. In such cases it would seem to be a wise precaution to rupture the membranes before beginning the administration of the anesthetic.—*Obstetrics.*

ACCIDENTAL HAEMORRHAGE: THE HAND BETTER THAN THE BAG.

FIEUX (*Annales de Gynec. et d'Obstét.*, March, 1900) insists that in accidental hæmorrhage from detached placenta the obstetrician's hand is safer from the first as the delivery agent than Barnes's and Champetier de Ribes's bags. He relates a bad case, where the bleeding set in early in the eighth month. The patient was aged 35, she had already been pregnant twice, bearing the children to term, but both died during labour. Fieux found the patient dying from hæmorrhage. The uterus reached to the epigastrium, it felt as hard as wood all over; neither any tender nor any soft spot could be felt. Dark blood flowed from the vulva through a tampon. This plug being removed, the os internum was found impermeable, the cervix and os externum had undergone none of the changes characteristic of labour. Fieux injected saline solution (500 grams) under the skin. The patient was placed in obstetric position, then two fingers were introduced after a little manipulation through the os internum, the membranes were ruptured, and the dilating bag, introduced. But after twenty minutes' application according to the usual method the bag proved useless for dilatation. Fieux therefore passed his hand, finger by finger, into the uterus. The breech presented, the anterior foot was drawn down, and the child delivered; the head gave trouble for a moment when passing the outlet. The placenta immediately followed. Behind it a big black clot over half a pound in weight came away, followed by much blood. Half an hour after the beginning of this obstetric operation the uterus was perfectly empty. The *post-partum* hæmorrhage, which was but slight, was entirely stopped by introduction of the hand combined with a hot injection. The patient soon got well. Fieux considers that manual dilatation is much superior to the bag in any case similar to this, where the patient has already lost much blood and the parts around the cervix are rigid. The uterus must be emptied by the quickest method, and the hand is quicker than the bag.—*Brit. Med. Jours.*

DIET IN NEPHRITIS.

In a paper read at a recent meeting of the Chicago Medical Society on the effect of diet in nephritis, Dr. N. I. Davis, Jr., says (*Philadelphia Medical Journal*) that when a case of acute nephritis first comes under treatment it is best to enjoin rest in bed, to withhold all food for twenty-four or thirty-six hours, to give water freely and to empty the alimentary canal. Milk should then be given, at first in small quantities, at intervals of two hours; the quantity must be increased gradually until two quarts are taken daily. The exclusive use of milk is especially useful to those who have acute nephritis, because it meets the demands of the system more perfectly than that of any other single article of food. Intolerance of milk is often lessened or removed if, when a milk diet is begun, it is given in very small amounts, one or two ounces at a time, for example, and if the amount is slowly increased. Milk, moreover, is less likely to produce gastric distress if it is sipped instead of being drunk rapidly. All things considered, it is the universal judgment of the profession that there is in this disease no substitute for a milk diet.

When the urine becomes copious and the amount of nitrogenous matter voided in twenty four hours all that can be expected, farinaceous foods may be prescribed in addition to milk. In a few days some of the sweet fruits and simple vegetables can be given. When albumen disappears from the urine an egg can be tried. During the time that albuminous foods are being added to the patient's dietary, close watch must be kept upon the effect of it, the quantity of urine, the amount of daily nitrogenous excretion and the amount of albumin and number of tube-casts, if any, are found in the urine. When an egg can be taken without harm, white meats can be tried, such as the breast of squab and chicken, a little of boiled ham, or perfectly fresh fish. Red meats, rich in extractives, should not be eaten until recovery is established.

In chronic diffuse nephritis there is the same indications for a milk diet as in acute nephritis. It is, however, so prolonged a malady that an exclusive milk diet cannot be maintained continuously. A diet for this form was given. Interstitial nephritis is so chronic a malady that an exclusive milk diet, even if it were necessary, could be maintained only for a small portion of its entire course. The observation of Zasiadko, of St. Petersburg, are suggestive of the value of different diets in chronic nephritis. This gentleman administered to ten patients suffering from chronic nephritis, a vegetable diet for ten days, for a like period an animal diet (with a little bread added), and for another equal period of time a mixed diet. While upon a vegetable diet the amount of albumin in the urine lessened, arterial tension diminished, dropsy increased, the pulse became slower, weaker and softer, appetite failed, the patients became weaker and more apathetic. While upon animal food, the albumin increased in the urine, arterial tension rose, edema lessened, the pulse quickened and grew fuller, the patients became stronger and more cheerful. The effects of a mixed diet were midway between these. Alcoholics are looked upon as contraindicated in renal affections by the majority of clinicians. They are renal irritants.—*The Dietetic and Hygienic Gazette.*

THE TREATMENT OF EPILEPSY;

Furstner (*Centrabl. f. Nervenh u. Psychiat.*, Coblenz u. Leipzig, December, 1899, S. 708) discusses at length the different forms of epilepsy and their amenability to treatment by the bromide salts. He is a thorough believer in the efficacy of bromides in true epilepsy, and agrees with Biswanger that the evil results of their continued administration is greatly exaggerated both by the profession and by the lay public. One of the reasons of their failure in private practice he states to be this fear, the want of realization of the continued and continuous effect of the drug, as well as a want of patience and perseverance on the part of patients and their relatives. Beyond the passing and occasional first symptoms of bromism, he has never in his experience seen any bad results when the drug was administered in doses of from three to four grms. per day to children, and from five to six grms. per day to adults. Except occasionally, when ordinary doses lost their influence, he has never prescribed the drug in larger quantity.

He next proceeds to deal with the very important question of mistakes in diagnosis, whereby other affections are confounded with genuine epilepsy.

The first group of cases in which errors in diagnosis are apt to be made are met with chiefly in private practice and in young persons, although not a few cases have been observed among adults. The relatives are always sure that epilepsy exists, and many of the symptoms are identical with those of true epilepsy. The seizures occur most always in the daytime, and the tongue, sometimes the lips, are bitten. Sometimes as many as four or five attacks occur in a day. The seizures are often due to physical disturbances, *e.g.*, constipation, and often to occurrences in the surroundings, such as family quarrels, whippings, etc. After the attacks there is usually drowsiness, irritability, or paræsthesia; such objective symptoms as pupillary anomalies or heightened patellar reflex may also be observed. When in such cases bromide is prescribed in doses according to the age of the patient, the only result is an increase in the severity and frequency of the fits. If the doses are increased, mental apathy, obtuseness, and urinary troubles and acne result. The writer looks upon such cases as hysterical manifestations. A complete change in their surroundings, such as isolating them or placing them in an asylum, lessens the frequency of the seizures or often stops them altogether. The sudden cessation of the bromides is followed by no bad effects. In some cases of this kind he is of opinion that the exhibition of the bromides is useful for purposes of different diagnosis. Next he discusses a group of cases, almost wholly confined to children, where organic changes in the brain are either congenital or acquired at a very early age. Their only point of resemblance to true epilepsy is in the character of the convulsions. When bromides are given to such cases, the results are inconstant. Any improvement is temporary, and at intervals the fits return in spite of bigger

doses. In such cases a regular bromide course is not justified. Furstner next proceeds to discuss what is known as "epilepsia tarda," and will only admit into the group those cases in which there is no gross brain lesion present. In some cases of epilepsia tarda the bromide treatment successfully removed the fits; in other cases the results were less satisfactory, and after apparent recovery the attacks returned. In the last group he is of opinion that organic brain lesions were present, either congenital or of early occurrence (infantile paralysis), or, more probably still, that the cerebral arteries were atheromatous.

Before pronouncing any opinion based on statistics, as to the value of bromides in true epilepsy, it is necessary and desirable to have more knowledge regarding the convulsions and fits of infancy. Whether these stand in any relation to epilepsy or not, they certainly tend to create a predisposition towards the occurrence of that disease in later life. Out of 141 cases where epilepsy occurred prior to the eighteenth year, the writer found that convulsions had occurred in childhood in ninety-two cases; and where epilepsy first appeared in fifty-two cases, at the age of twenty to thirty years, convulsions in childhood were ascertained in nineteen of them.

Fits in children should be systematically treated with bromides, and the treatment should be continued long after the cessation of the fits. The writer had his best results where the treatment begun in childhood was continued over the age of puberty.—*Edinburgh Medical Journal*, April, 1900.

NERVOUS AND MENTAL DISEASES.

OBSTETRICAL PARAPLEGIAS.—Ballet and Bernard (*Revue Neurologique*, November 30th, 1899) refer to the pioneer work of Bianchi, in 1867, upon this subject. Before his day, obstetrical paralyses were thought to be reflex in nature, and he was the first to show that the condition is due purely to compression by the fetal head or forceps of the sacral nerves.

Since Bianchi's study, material of this sort has rapidly accumulated, and some of the standard works on obstetrics now devote a separate chapter to obstetrical paralyses.

Within the past few years, however, a reaction has set in, due to the prevalent ideas as to the autotoxic nature of pregnancy. Instead of compression paralysis we hear nowadays more about infectious polyneuritis as one feature of a general autointoxication. It is claimed that polyneuritis from intoxications of all sorts shows a marked tendency to involve the domain of the sciatic nerve; so that while some of these obstetrical paralyses may be purely traumatic, others are of toxic or mixed nature. The present authors report a case exhaustively and then analyze the entire subject of obstetrical paralyses; as a result of their labors they come to the conclusion that the subject is much more complex than has heretofore been thought. In fact they make no less than four categories, well differentiated, of these lesions, viz.:

1. Paraplegia symptomatic of an infectious or toxic polyneuritis, occurring in puerperal women with sepsis or albumenuria.

2. Purely trumatic paraplegia, due to no other cause than compression of the nerves. The case described by the authors appears to be typical of this class.

3. Associated cases, in which a trauma (compression) and a coincident infection or intoxication are both present as factors. A case reported by Lamy, in the *Revue Neurologique* for August 30th, 1896, serves to well illustrate this category.

4. Finally, we may have hysterical paraplegias in connection with childbirth. Charpentier, and more recently Leeson (*Edinburgh Medical Journal*, 1897, p. 411), have made contributions to this subject.—*Med. Review of Reviews.*

SOCIETY REPORTS.

TORONTO MEDICAL SOCIETY.

Stated Meeting, April 19th, 1900.

The President, Dr. Gilbert Gordon, in the chair.

Dr. Duncan exhibited a patient. Case reported in June Number of THE CANADA LANCET.

Dr. Gordon exhibited Mr. T. electrician, six months ago exposed to severe changes of temperature in Edmonton ; was a moderate drinker ; had considerable domestic worry. In September he noticed weakness in hands, arms and shoulders Was unable to dress himself. In Montreal a diagnosis of multiple neuritis had been made. There was no history of syphilis. A doctor in New York diagnosed muscular atrophy.

Dr. Graham Chambers exhibited two patients, 1st, case of iodide rash. Eight years ago had syphilis, three weeks ago an ulcer had appeared on the lip. Pot.iodid. was given. When the rash appeared, also after the treatment was begun, balinitis developed. Dr. Chambers said the rash was not an affection of the sebaceous glands but of the blood vessels, as the rash was produced often where there were no sebaceous glands. Case 2, Pityriasis Rosea, the rash came out first in bright red spots on the chest, arms and elbows. There were two lesions, one scaly macular, the other circinate, red edged and centre clearing. It was a typical case of the maculate and circinate form.

Dr. Webster opened the discussion on the use of oxygen gas in pneumonia. He reported a case seen at the Western Hospital on the 7th dayof the disease. Patient was perfectly helpless,cyanosed and apparently dying. The cold gas was used for fifteen minutes but the supply became exhausted. Then heated oxygen was used. The patient in a very few minutes was evidently much relieved and became a nice color. When the cyanosis recurred the gas was again administered and the patient lived from Friday until Tuesday. On Monday afternoon the effect of the hypodermic injections of strychnia seemed to become worn out before the time for the next injection arrived, and the heart was found to respond less and less to the stimulant. The patient died without cyanosis. The case was one of double pneumonia.

Dr. H. B. Anderson said he had seen oxygen used in two cases, first in a case of Dr. Guinane's in St. Michaels, in an emergency he had been asked to advise the house surgeon. The pulse was 200, temp. 104, respirations 100, extreme cyanosis. He could not tell the extent of lung involvement in the pneumonia as he saw the case only on this occasion. Gas was administered by an ordinary inhaler, improvement was immediate, in less than ten minutes. On the same day a recurrence was relieved by oxygen and the patient made a good recovery. Second case : Child four months old, suffering with broncho pneumonia, pulse above 200, temp. 104 1-5, respiration 100. Heated oxygen was used, and

the child made a rapid recovery. He quoted Dr. A. H. Smith, N. Y., who introduced oxygen in 1860. He found by obstructing the windpipe of animals that they could be kept alive by the administration of oxygen gas, showing that although the volume of air admitted was reduced, the excessive supply of oxygen sustained life. Dr. Smith's conculsions were that little benefit could be expected in complete consolidation of the lungs, but very good results in such cases as diphtheria, croup, bronchitis, broncho pneumonia and croupus pneumonia, where there was obstruction and little or no consolidation.

Dr. McIlwraith had had two cases which he reported. He had noticed that the cold gas used in the first case had acted as a cardiac stimulant, but the heated oxygen used in the second acted as a nerve stimulant.

Discussion. Dr. Wilson said that in 1877 he had used oxygen gas in a case of bronchitis with weak heart. He had obtained a splendid result, manufacturing the gas himself from manganese dioxide. He could not find out at what degree of heat the gas heated in Underwood's respirator was when it reached the patient.

Dr. McPhedrn said in consultation he had seen little benefit in serious cases of pneumonia. He agreed with the paper quoted by Dr. Anderson.

Dr. Anderson said in reply that the gas was a heart stimulant and was advised in Dr. Smith's paper to be given early when respirations reached 35, to relieve the right heart.

Dr. Rudolph described some experiments with chlorotone, 1st, as a local anæsthetic After free bathing for 15 minutes the parts were still sensative. 2. As a general anæsthetic, it was a perfect anæsthetic for physiological work. 1.5 gm. given to a dog, the chart of cardiac tracings, was exhibited and began 55 minutes after the dose. The blood pressure improved and continued so for 3 hours and 9 min. The dog died from heart failure. Respiration continued for a few minutes after the pulse stopped. 2. A small dog was given .24 gm. per kilo weight more than enough to produce anæsthesia according to the statement of the company pushing the drug. The dog became intoxicated but not anæsthetized. The temperature fell and he took three days to recover. 2.75 gm. per kilo produced complete anæsthesia, but also death. Here the anæsthesia was perfect, blood pressure is not affected by the dose until the last when death occurs. The temperature shows an enormous fall which is not described in the literature of the drug. With guinea pigs .2 gm. per kilo weight administered produced a gradual death without anæsthesia, the temperature falling from 101° F. normal to 80° F. Dose of .1 gm. per kilo produced a slight fall in temperature, dose .15 gm. produced marked fall in temperature, no insensibility, intoxication and very slow recovery. The effect produced by the drug was, 1. great fall in temperature, 2. intoxication, and 3. if the dose was large enough, insensibility and death. His conculsions were: 1. No use as a general anæsthetic. 2. Narrow margin between no effect and fatal or profound effect. 3. No antidote.

Discussion. Dr. J. Ferguson said he had found it a perfect failure as a hypnotic. Dr. Dickson thanked Dr. Rudolf, and said it was a step in the right direction. Dr. Chambers said from its chemical structure it

should be better than chlorol. The fall in temperature was common to all the phenic series. He had had good results in two cases. Drs. McPhedran and Webster had had no good results. Dr. Rudolf in replying said that the first guinea pig which had died had had suppression of the urine.

(Stated Meeting, May 17th.)

The President, Dr. Gilbert Gordon, in the chair.

Dr. F. N. G. Starr reported a case of malignant (?) disease of the gall-bladder, simulating hydro-nephrosis; feeding through the gall-bladder for three days A female, aged 51, first seen March 22nd, 1899, was complaining of pain in the right renal region extending to Poupart's ligament and across to the left side. On examination, a mass, the size of a duck's egg, three fingers breadth below the costal margin, not continuous with the liver, movable on palpitation and respiration, very tender, resonance over the mass, and between it and the liver margin. She described a sensation of something slipping up under the ribs on sitting up. She gave no history of gall stones or discolored stools, but of pain in the side, associated with a dimunition in the quantity of the urine, lasting a day or two; then a large quantity would be evacuated and the pain relieved. Examination of the urine shewed neither sugar nor albumen. A few dumbell crystals sp. gv. 1022, amber color. An offensive discharge from the vagina, but on examination no growth or malposition. There had been no menstruation for five months. A provisional diagnosis was made of floating kidney. On April 9th she had after three days of great pain, passed half a chamber pot full of urine, and was then comfortable for a time, but was again suffering. Very little urine had been passed—each day 8 oz. being withdrawn by catheter. In the next 15 hours she passed 4 oz. The mass had increased greatly in size and new extended to the left of the umbilicus and was less freely movable. She was vomiting a great deal. Nothing relieved her not even lavage. It seemed that the ureter had become kinked. On April 12th an incision was made over the right kidney which was found normal in size and appearance. The ureter was however greatly distended because of some intra-peritoneal tumor, the wound was closed and an opening made over the mass which was found to be a greatly distended gall-bladder.

On aspirating, a considerable quantity of dark brown grumous fluid was drawn off, which, microscopically, was made up of cholesterine crystals and disintegrated blood. The general peritoneal cavity was protected by sponges and the bladder opened. The wall was very thick, from ¼ to ½ an inch. The patency of the common bile duct was made out, and believing the case malignant, the opening into the gall-bladder was sutured to the abdominal wound and a drainage tube put in the remainder of the wound was closed. For days the tube drained away the dark brown fluid which gradually became clearer until clear bile was discharged. As soon as the patient began to recover from the anæsthetic, the vomiting recurred. For 36 hours she lived on nutrient enemata, then the bowel refused to retain them. The evening of the third day found the patient sinking. She was restless, face drawn and pinched, eyes sunken, temperature subnormal, pulse 140, irregular and barely perceptible. Mr.

Cameron came in at this time, and while discussing the advisability of giving a subcutaneous injection of normal saline solution, it occurred that through the gall-bladder was a direct opening into the duodem. Three pints of solution were put into an irrigator, the nozzle into the drainage tube which was packed to prevent leakage, and the injection began at an elevation of 18 in. and raised to 3 ft. There was some leakage but the patient got about one quart. Inside of half an hour the effect was marvellous. She became restful, pulse full, temperature slightly elevated, vomiting ceased and she had her first undisturbed sleep. These injections were repeated twice during the night, and in the morning it had proved so successful that 3 oz. of peptonized milk was given and continued every two hours for three days. She was then fed by the mouth. Recovery good. She continues in good health, though she still wears the drainage tube because on two occasions it had become blocked with mucous, and she complained of the old pain under the ribs; hence, fearing that the closing of the opening would lead to a recurrence of her old symptoms, she was advised to put up with the inconvenience. Dr. Starr wished to call the attention of the members to the unusual method of feeding a patient when the condition had become hopeless. He had been unable to discover that this method had ever been tried before.

Drs. Primrose, Oakley, Rudolf and McMahon discussed the case.

Dr. A. Small reported a case of an alcoholic treated by the "Bromide sleep." A man, aged 40, was given on the first day, 9 dr.; on the 2nd, 8dr.; on the 3rd, 10dr.; on the 4th, 8dr.; was drowsy all afternoon; then 15 gr. sulphanol were given and he slept. Since then he has not returned to the alcohol. The temperature ranged through from 96.2° to 98° F.

In discussion, Dr. Rudolf said he had failed to produce sleep, but that the results were good. There was no Bromide rash. Dr. McLeod, the originator of the treatment, had reported nine cases with two deaths, one from pneumonia, one from septicæmia from caries of the teeth. One case also had had bronchitis and recovered, No fatal dose has been recorded. Brunton, on theory, gave sodium chloride as an antidote, but as bromine repels chlorine, the theory is unsound.

Dr. Powell said the treatment was old. He had, in 1878, treated a morpho maniac, giving potas. brom. dr. 6 to 8 a day until the staggering gate was produced. The treatment lasted six weeks; the patient lived 15 years and died of pneumonia, without having returned to the use of morphia, though given it twice during that time. Pot. brom. is much more of a tissue poison than the soda salt. Strychnine is antagonistic.

Drs. Machell, A. R. Gordon, Carveth and Hunter also discussed the treatment.

The reports of the officers shewed that the society was in a better condition than it had been for ten years. The average attendance was 35. Addresses were given during the season by Dr. Rotch of Boston, on "Infant Feeding," Judge Macdougall and Mr. B. B. Osler on "Expert Testimony," and Prof. McLennan on "The X Ray."

The following officers were elected: Pres., A. Primrose; 1st Vice-Pres., F. N. G. Starr; 2nd Vice-Pres., R. D. Rudolf; Cor. Sec., Porter; Rec. Sec., A. G. Ashton-Fletcher; Treas., G. H. Carveth; Council, Gilbert, Gordon, McMahon and Machell.

MISCELLANEOUS.

SPASM OF THE LARYNX DUE TO AUTO-INTOXICATION FROM RENAL INSUFFICIENCY FOLLOWING GENERAL ARTERIO-SCLEROSIS.

Dr. Valink, *L'Union Medicale du Canada*, April, 1900, contributes an exhaustive report of a case in practice under his close observation for an entire year. On March 14th, 1898, the doctor was called to relieve A. L., a carpenter, aged 55 years, suffering from a severe attack of suffocation. The crisis had been short, and upon his arrival the patient had recovered entirely and was standing at his shop door. Inquiry proved that this was not the first attack, and that the patient had been treated for asthma as a possible cause of the spasm. The patient was submitted to a thorough examination, with the following result. The nasal fossæ and the larynx were healthy, the respiratory murmur deficient in the left lung, with a history of several attacks of pulmonary inflammation upon the same side, hacking cough, with mucous expectoration free from tubercle bacilli. There was dyspnoea on exertion, but none following the suffocative attack. Pulse 85, hard, intermittent, general arterial sclerosis, with coldness of the extremities, cardiac hypertrophy. Reflexes normal, epigastric pains, furred tongue, gastro intestinal fermentation and constipation. Urine pale, sp. gr. 1010, amounting to 400 c.c. in 24 hours, slightly albuminous, urea diminished, alkaline with phosphates, urobilin, and indican. Skin dry and itchy in the lower extremities. The patient was nervous, a hard worker, without any history of syphilis and subject to chronic rheumatism.

The author here enters into a somewhat detailed explanation of the effect of arterial sclerosis, in modifying the functions of the body organs, causing phenomena connected with nutritive changes, and saturating the system with toxins from deficient elimination, the organs themselves being affected, the nervous centres and especially the medulla oblongata sharing in this. The differential diagnosis is also discussed in detail, which led to the doctor making a diagnosis of "laryngeal spasm, combined perhaps with spasm of the trachea and bronchi, from intoxication of the bulb, due to renal and hepatic insufficiency, in an individual with general arterio-sclerosis."

The patient was put upon a milk diet, with abstinence from meats, and calomel and beta-napthol used to clear and purify the digestive tract After five days the albumen, indican and urobilin disappeared and the urine increased in amount to 800 c.c. with a density of 1015. At the end of three months, an attack of bronchitis intervening, the urine was maintained at 1000 c.c., with traces of albumen. There was no attack of spasm during the bronchitis. Sodium iodide and trinitrine were administered and the former diet maintained. For four months the urine con-

tinued satisfactory, amounting to from 1200 to 1500 c.c. in the day with a density of 1015 to 1022, slightly acid, urea 22 grammes, no albumen or indican.

In the autumn, as the result of exposure and hard work, and the resumption of a meat diet, there was an attack of laryngeal spasm. On examination the urine was found to have diminished to 350 c.c. in the day, the urea to 7 grammes, sp. grav. 1010, with a trace of albumen, some blood corpuscles and leucocytes. Three weeks rest in bed, with a milk diet, restored the patient. Several similar relapses followed, each preceded by carelessness in diet. In the following March the patient changed physicians, his new attendant making a diagnosis of laryngeal phthisis and general tuberculosis, entirely traversing the former line of treatment, and adopting over-feeding, creosote, etc. The auto-intoxication thus produced caused a diminution of the urine to 200 c.c. with abundance of albumen followed by severe attacks of laryngeal spasm in which condition his former physician found him on his arrival. The patient's face was blue and anxious, the mouth agape, the thoracic wall immobile with no vesicular murmur, the skin clammy. After the spasms relaxed, the patient was exhausted, but respiration became normal and there was no laryngeal bruit. Morphia was administered, followed by some hours sleep. Another laryngeal spasm then occurred, and the patient succumbed.

The author concludes this interesting report by drawing attention to recent observations of Lancereaux tracing the laryngismus stridulus of infants to auto-intoxication from intestinal fermentation.—WISHART.

Obstetric Aphorisms.

C. A. Van Ramdohr in Post Graduate for April has the following aphorism for the obstetrician's guidance and compact enough to be easily remembered.

1. Never rupture membrane unless you are prepared to finish delivery at once, if necessary, or unless you intend to confine the patient artificially within a limited period of time.

2. External measurement of pelvis has to be practised to yield trustworthy results.

3. The external (Baudelocque's) diameter is never reliable.

4. The distance between the crests should be about an inch greater than the distance between the spines. Equal distances or a larger interspine indicate a deformed pelvis.

5. Contraction at the outlet is extremely rare, and if it occurs, is usually the result of an ankylosed coccyx.

6. If the index finger can touch the promontory there is always a reduced conjugate diameter.

7. If, on the introduction of two fingers, the middle one does not reach the promontory, the conjugate is normal or more than normal.

8. Whenever the whole hand can be passed through the superior strait, there is a possibility of withdrawing the child through the natural passages.

9. If the hand cannot be passed, there is an absolute indication for Cesarean section.—*Med. Record.*

Intestinal Antisepsis in Typhoid Fever.

The season for the annual discussion on the treatment of typhoid fever is close at hand and we may expect the current literature from now until December to be filled with such names as Woodbridge, salol, Osler, calomel, cold water, salts, turpentine, opium and silver, and such like.

The International Medical Magazine for April leads off with a symposium on this very seasonable subject. The opening article is by James M. Anders, who says that intestinal antiseptics are valuable in this condition, but they are by no means a specific, as he considers the disease one of the general system and not altogether confined to the intestinal canal.

The Woodbridge treatment he gives a black eye in passing and in fact only mentions it to condemn it as illogical and unscientific, which it undoubtedly is beyond and peradventure.

He recommends intestinal antiseptics for a rational purpose that is to control in some measure the meteorism which is often due to some undigested matter in the canal and in such cases a laxative will have a good effect. Salol he has used for a number of years with good results.

Intestinal irrigation is recommended in appropriate cases as where the ulcerative process is in the colon as well as in the small intestine.—*Charlotte Med. Jour.*

Nutrient Enemata.

C. A. Ewald (*Archiv. f. Anat. und Physiol.*, Supp. Bd., 1899, p. 160). —Careful experiments on the extent to which nitrogen is absorbed from the rectum were made. The enemata employed consisted of milk and eggs, with the addition of a little salt and red wine, each being of the value of about 400 calories. Three such enemata were given in the day.

The nitrogen eliminated by the urine and that contained in the material washed out of the bowel were carefully estimated, and in that way the degree of absorption ascertained.

Details of 5 cases are given and in these the degree of absorption varied from 30 to 95 per cent. of the nitrogen contained in the enemata. The writer is unable to explain the great individual differences in the absorptive power of the rectum but the save variations are observed in its degree of tolerance. Thus, in some of his patients rectal feeding was carried on for a month, whereas in others pain and intolerance supervened after 3 or 4 days. The addition of opium to the enema was not always sufficient to allay the rectal irritability.

The amount of nutriment which can be administered by the rectum is bound to be insufficient for the patients needs. An individual even when absolutely confined to bed must be supplied with at least 1,500 calories of potential energy daily, while the enemata given, even supposing them to be fully absorbed, did not contain more than 1,200 calories. Unfortunately it is impossible to increase the strength of the enema or to give it more frequently for both courses result in producing irritation of the rectum. He concludes "Our researches and clinical experience show beyond doubt that, under favorable conditions, a very considerable

proportion of nitrogen given per rectum can be absorbed, although an actual storage of it in the body was not attained. Further research must endeavor to find a method of giving larger or more concentrated quantities of proteid without producing intolerence."—*The Medical Review.*

Gonorrheal Endocarditis

By Dr. Loeb (*Deutsch. Arch. f. Klin. Med.*; Ref. *Bost. Med. & Surg. Jour.*, CXLII, No, 12, p. 303).

The author make the occurrence of a case of ulcerative endocarditis, in which gonococci were demonstrated in the valvular lesions, an excuse for a short review of the subject with reference to previously reported cases, and draws the following conclusions:

1. Amongst gonorrheal patients there develops in certain instances an endocarditis, either in direct association with the acute catarrhal stage, or, as is more common, as an accompaniment of a joint manifestation.

2. Apart from occassional observations in which bacteriological examination demonstrated streptococci, and the endocarditis accordingly is to be considered part of a pyemic infection, gonorrheal endocarditis is a genuine metastasis caused by gonococci.

3. It occurs in two forms; endocarditis verrucosa and endocarditis ulcerosa. In the former it is generally the mitral valve which is affected, resulting in permanent valvular defect or in *restitudio ad integrum.* The ulcerative form almost always attacks the aortic valve and relatively often the pulmonary.

4. Endocarditis ulcerosa of gonnorrheal origin occassionaly attacks normal valves, put generally develops in valves that have been the seat of former disease.

5. As in the ulcerative form of endocarditis in general, so also in the gonnorrheal form the female, in proportion to total number of infections in that sex, is relatively often attacked.—*The Post Graduate.*

THE MERRY MICROBE.

They say there's microbes all around, huntin' for their prey ;
There's nothin' pure tew eat or drink, and no safe place to stay ;
There's miasmy in the dew-fall and malary in the sun ;
'Tain' safe to be out doors at noon or when the day is done.

There's bacteery in the water and tricheeny in the meat,
Ameeby in the atmosphere, calory in the heat ;
There's corpussels and pigments in the human bein's blood,
And every other kind of thing existin' since the flood.

Them bugs is all about us jest waitin' for a chance
Tew navigate our vitals and tew 'naw us off like plants ;
There's men that spends a lifetime huntin' worms jest like a goose,
And tackin, Latin names on 'em and lettin' on 'em loose.

Prescriptions from Medical Record.

PICRIC ACID IN CHRONIC URETHRITIS. Begin with half of one-per-cent. solution and gradually increase to ten-per-cent strength. Apply by means of a Guyon injector. Contraindicated in the acute stages.—DESNOS AND GUILLON. *Medical Record.*

ANAPHRODISIAC.

℞ Lupulin ..... 10 gm.
For ten powders. S. Take one at bedtime.

ELIXIR OF PARALDEHYDE.

℞ Paraldehyde ..... 10 gm.
Syr. menthæ ..... 20 "
Elix. aromat ..... 40 "
Aquæ destil ..... 80 "
M. S. Teaspoonful once or twice daily.

HEMORRHOIDS.

℞ Exalgin ..... 0.30 cgm.
Ext. bellad ..... 0.10 "
Ceræ alb ..... 1.0 gm.
Ol. theobr ..... 3.0 "
For one suppository.

STOMACH PAINS.

℞ Morphin. hydrochlorat 0.02
Syr. simp ..... 30.
Aq. chloroformi sat ..... 60.
Aq. aurantii flor ..... 60.
M. S. Dessertspoonful at onset of attack.
—*Jour. des Praticiens.*

BASEDOW'S DISEASE IN CHILDHOOD.

℞ Strontii bromidi ..... 6 gm.
Strontii iodidi ..... 12 "
Aq. destil ..... 40 "
Aq. menth. pip ..... 20 "
Syr. menth. pip ..... 20 "
M. S. Teaspoonful three times daily.
—*Socquart.*

SEVERE APHTHÆ.—Paint with

℞ Ac. salic 2
Spirit. vini 10
Glycerini 25

GASTRIC CATARRH.

℞ Acid. hydrochlorici (C. P.) ..... 2.50 gm.
Acid. azotici ..... 0.80 cgm.
Spir. vini rect. (90 per cent.) ..... 18. gm.
Aquæ font ..... 150. "
Syr. limonis ..... 100. "
M. S. A teaspoonful in a half glass of water after meals
—*Le Progrès Méd.*

HEADACHE IN NEURASTHENIA.

℞ Zinci valerianat.,
Ferri sulphat.,
Ext. rhei,
Asafœtidæ.....āā gr xviij.
M. ft. pil. No. xx. S. One t.i.d.

DRINK FOR DIABETICS.

℞ Acid. citrici..... 1 gm.
Glycerini.,
Sp. vini gallici.....āā 50 "
Aq. destill..... 500 "

APHTHÆ.

℞ Sodii borat..... 4
Tinct. benzoin..... 4
Syr. rubi idæi..... 40
Touch with aid of a brush six times daily.

CHAPPED LIPS.

℞ Paraffin..... 80 gm.
Vaselini..... 80 "
Ext. æth. alkannæ..... 0.50 cgm.
Ol. bergamottæ,
Ol. Limonis.....āā 1 gm.
Melt in a water-bath and make into sticks
—*La Mèdecine Moderne.*

The Treatment of Hemorrhage in Pregnancy.

Treatment of December 28, 1899, contains an article by MURPHY which may be summed up as follows:

1. Accidental hemorrhage is not due to external injury, but to disease of the uterus, accompanied in a large majority of cases by kidney mischief.

2. It must be divided clinically into two classes; those in which uterine contractions are absent, and those where they are present.

3. In the latter and milder form, rupture of the membranes and delivery *secundem artem* will suffice.

4. In the former vaginal plugging, uterine binding, and general stimulation should be employed until the cervix dilates sufficiently to allow of delivery.

5. If symptoms of internal hemorrhage continue under this treatment the patients desperate condition can probably be only best relieved by Porro's operation.

6. In serious cases of accidental hemorrhage, in the absence of positive signs, the child's life need probably never be considered.

As to the general treatment of hemorrhage, nothing need be said except that here, probably even more than in other cases, the beneficial effects of saline infusions, either rectal, subcutaneous, or intravenous, are obtained.

TREATMENT OF BALDNESS. Gessner, of Paris, according to the *Therapeutic Gazette*, claims that the prognosis in chronic seborrhœa is not as unfavorable as generally supposed, providing timely treatment is employed. He advises the use of tincture of soap with a little lavender, and washing with very hot water, then with cold water. Where the skin is irritable or inflamed, or if there is eczema, he applies:—

℞	Ichthyol	12 ♏.
	Zinc oxide, Powdered starch, of each	1 dr.
	Petroleum	1 oz.

On first beginning this treatment many hairs come out, but these would be lost anyway, and simply hang in their follicles. Their removal makes room for others. This treatment is employed once or twice a week, and, to avoid the removal of too much fat, it is followed by an application of oil. After thoroughly cleansing the scalp, the following is applied:—

℞	Precipitated sulphur	24 to 48 gr.
	Resorcin	12 to 24 gr.
	Salicylic acid	6 to 12 gr.
	Tincture of benzoin	12 ♏.
	Petrolatum	1 oz.

This ointment is well rubbed into the scalp and the head covered with a cap at night. As a substitute the following ointment is used;—

℞	Resorcin	18 to 36 gr.
	Chloral hydrate, Tannic acid, of each	36 to 60 gr.
	Tincture benzoin	12 to 24 ♏.
	Castor oil	36 to 60 ♏.
	Alcohol	20 fl. dr.

Where baldness already exists the scalp is vigorously stimulated by applying every night, by the aid of a stiff brush, an ointment containing from 5 to 10 per cent. of chrysarobin, a night cap being worn. Faradisation is practised daily from five to ten minutes with a brush.—*Practitioner.*

A CASE OF ARTIFICIAL IMPREGNATION.—Dr. Elliott Gardner (*Medical World*, April) records the case of a woman upon whom he had operated successfully some five or six months previously for laceration of the perinæum, and of the cervix uteri, with erosions, metritis, and posterior displacement consequent upon her confinement, who worried because she did not again become pregnant, her first child having died shortly after birth. Dilitation of the internal os, coupled with all ordinary treatment and regimen, failing, Dr. Gardner finally injected with a syringe into the os uteri some of the semen ejaculated by the husband, two days after the cessation of menstruation on May 24, 1899. On February 24, 1900, the patient gave birth to a fine boy weighing nine pounds and a half. The labor was easy. Both mother and child did well. This would appear to be the fifth case on record in this country.—*N. Y. Medical Journal.*

The Treatment of Psoriasis.

S. C. Martin (*American Journal of Dermatology and Genito-Urinary Diseases*, November, 1899), advises as the best internal remedy in psoriasis, arsenic, echtol, and potassium iodide. When the disease assumes the diffuse form it is best treated externally by Robinson's soap method, which is applied as follows: The soap is to be thoroughly rubbed into the skin and allowed to remain. The rubbing is to be repeated twice a day for four or six days, then for three or four days once a day, and then nothing is applied for four days, when a bath is to be ordered. The bath is taken only after the epidermis has begun to loosen itself; if taken too soon retention and shrinkage will be so great as to interfere with the move ments of the body.

Under this treatment the redness and infiltration rapidly disappear, and involution follows.

In some cases, where the eruption is not very extensive, but the infiltration considerable, the application of echtol is effected in the following manner: Saturate a thin cotton compress and apply to the infiltrated part. It should be applied constantly until the intiltration subsides. The scales should be removed before each application of the echtol with baths and soap. When the eruption is limited and suitably located, chrysarobin may be used, in the strength of twenty or thirty grains to the ounce of vaselin; or pyrogallic acid may be tried as a substitute, in the proportion of one to ten of vaselin. At the same time arsenic in the form of Fowler's solution should be given in five-drop doses three times a day, after meals; or, if this fails, try large doses of iodide of potassium, from a scruple to a drachm, three times a day. Meat should be sparingly used, or, entirely prohibited. Alcoholic stimulants should be strictly interdicted. Mixed forms of this disease or complications require special notice. Plethoric patients will need saline purgatives and alkaline diuretics. Anemic cases require iron tonics and up-builders. Of course, the good sense of the physician wtll suggest many aids not here mentioned; but what the writer would particularly emphasize is the necessity of constant watchfulness and perseverance on the part of the physician and patient, if permanent success is desired.—*Therapeutic Gazette.*

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EDITORIAL.

ASSOCIATIONS FOR THE PREVENTION AND TREATMENT OF TUBERCULOSIS.

When Koch in 1882 announced to the world the discovery of the specific cause of tuberculosis, it was confidently expected by both the medical profession and the public that a brighter day had dawned in the management of the varied forms of this disease. His discovery certainly gave a great impetus to the study of tuberculosis resulting in a most satisfactory increase of our knowledge of all that pertains to it, yet it has to be confessed that so far as abating the scourge is concerned the results have been disappointing. According to statistics, neither the incidence of the disease nor its mortality have been appreciably lessened, though a much more hopeful view is taken of its treatment in individual cases. The appreciation of these facts has led to an inquiry into the methods which have heretofore been adopted for the regulation of tuberculosis, and to the conviction that modern preventive medicine has not put forth its best effort for the control of the disease. Though the infectious nature

of tuberculosis is generally recognized, yet the means adopted so successfully for the control of other infectious diseases have been entirely neglected in dealing with this—the greatest reproach to medical science at the present day. Many difficulties arise in the proper regulation of tuberculosis as compared with other infectious diseases. It occurs so commonly, is so widely diffused geographically and is so chronic in its course, that it is practically impossible to isolate every case and keep it under rigid control until disposed of. The great expense involved in carrying out any plan for its proper management has always stood in the way of those who recognized the inefficiency of the means that have heretofore been resorted to and the necessity for something better.

During the past year or so, however, organizations have been formed in Great Britain, the United States, Germany and other countries for the purpose of enlisting the sympathy and co-operation of Legislative bodies, the medical profession and the public in a supreme effort to lessen the ravages of the disease. In general, the aim of these associations is to disseminate among the public a knowledge of the infectious nature of tuberculosis, the means by which the infection is scattered, the necessity for the proper disposal of sputa and other excreta, and other necessary prophylactic measures against the disease; the erection of sanatoria for the treatment of *curable* cases as well as the providing of suitable accommodation for he isolation of *incurable* cases such are now too commonly received in to our general hospitals; the securing of the co-operation of Legislative bodies, philanthropic and charitable organizations and individuals in securing the funds necessary to carry out these objects.

Such an organization known as "The Toronto Association for the prevention and treatment of Consumption and other forms of Tuberculosis" held its inaugural meeting in Association Hall on May 8th. A large audience was present, showing the public interest taken in the scheme. The following officers were chosen:

Hon. President: Hon. Sir John A. Boyd, Chan. H.C.J.

President: E. J. Barrick, M.D.

Vice-Presidents: Rev. Prof. W. Clarke, D.C.L., Thomas Crawford, Esq., M.L.A., Albert A. Macdonald, M D., W. R. Brock, Esq., E. O'Keefe, Esq., Pres. Jas. Loudon, LL.D., Rev Father Ryan.

Treasurer: D. W. Alexander, Esq.

Sec'y-Organizer: Rev. C. S. Eby, B.A., D.D.

A vigorous campaign is being instituted to further the aims of the association. That these aims are worthy of not only the sympathy but the active support of all classes of the community, and that good results may be confidently anticipated from their propogation there can be no doubt.

Membership in the league is accorded on payment of an annual fee of one dollar or life membership for twenty dollars. This will give a definite interest in the work to all who become members, at the same time securing a considerable revenue for the requirements of the association.

The movement is a most commendable one and needs no straining of facts nor misguided enthusiasm to make it appeal to both the profession and the public. Only harm can result from creating any needless "consumption scare" which will result, as it has in other places, in those unfortunates afflicted with the disease being shunned as lepers, often subjected to unnecessary hardship and cruelty and their lives made more miserable owing to the senseless fear or mistaken zeal of persons who have grasped a few distorted facts in reference to the question. While approving of the general work of such an organization when judiciously carried out, there is always a danger in attempting to place technical scientific information before the public, and in this particular instance the greatest discretion should be exercised. We think there are few in the medical profession who will indulge the sanguine views expressed by a lay officer of the association that "tuberculosis is as preventible as small-pox and in twenty years may be as rare." Many a good cause has suffered from the injudicious advocacy of individuals possessed of more zeal than knowledge. The reputation for broad common sense possessed by the members of the executive of the association is, however, a guarantee that its affairs will be administered with tact and discretion.

EDITORIAL NOTES.

Recently we have had some very pleasing results with the use of Suprarenal liquid and chloretone (20 per cent. and 1 per cent.) in eye work. In several cases of inflammation of the tear duct, the last of which was an acute supurrative dacryocystitis; the swelling of the lids and cheek being very great. After the application of the liquid we were enabled, on opening the canaliculus with a small pointed probe, to wash through the duct clearly, and the case improved immediately so that she had no pain. The swelling disappeared in a day or two and she has not complained since. At her next visit, four days later, everything looked normal, and the duct was easily syringed out, not requiring anything to clear it.

We have also been able to pass probes after its use in cases where cocaine was ineffectual in causing sufficient shrinking of the mucous membrane. C. T.

D. H. Gifford, of Omaha, (January No. of Annals of Opthalmology) in his clinical notes on sympathetic opthalmia says, that salicylate of sodium is the most important remedy for the disease that he knows of. He gives it in 15 grain doses in 3 ounces of brandy, making the patient stay in bed. He gives from 150 to 200 grains a day for from 3 to 5 days in a week until the inflammation decreases, then the number of days in the week upon which the large doses were given, was decreased; but 150 grs. were taken upon at least one day in each week, for several weeks after the last signs of active inflammation had disappeared. He also uses thick hop poultices and cites several cases with very good results.

In this fearful disease one is glad to hear of anything that promises so well. C. T.

Sinuses in the Vault of the Naso Pharynx.

Heath (Journal of Laryng., Rhin. and Otol., May, 1900) reports a case of atrophy of the mucous membrane of the middle and inferior turbinals anteriorly and posteriorly; the pharynx also being much atrophied, the cavity large, and posterior-rhinoscopy easy. The Eustachian eminences were enormous and filling the fossae of Rosenmüller, and reaching nearly to the pharyngeal roof. Just behind the upper edges of the choanæ, on each side, then appeared a transverse elliptical opening, ½

long and ¼" across at the widest part on the left side,—a probe entered about ¼". The openings could be easily felt and the finger inserted into the larger, but the floor could not be felt.

Intra-tympanic injections of Pilocarpine in Middle Ear Sclerosis.

Fischerich (Laryngoscope, January, 1900), reports satisfactory results following the use of pilocarpine in the middle ear in 120 selected cases. A 2% aquelous solution of the hydrochlorate was injected into the tympanic cavity, through a flexible tympanic catheter passed through a metallic Eustachian catheter well up into the tube. Six drops were used at first and gradually increased to 16, in a course of 30 to 40 injections The results had been satisfactory, even where other measures had failed. The average improvement was 2-10 times increase of the previous hearing capacity. In some instances a second course of injections had produced increased improvements.

Epilepsy of Aural Origin.

Lannois (Journal of Laryngology) gives the history of a patient of tuberculous inheritance, but without pulmonary symptoms, attacked with double otorrhoea at the age of seven, and epilepsy at age of thirteen. The attacks of epilepsy averaged one a week, when he came under observation. One ear had cicatrized and had been dry for some time, the other was still suppurating, drum and membrane entirely destroyed, cicatrized in part, but with two ulcerations below and in front. HW.=contact cure was obtained in a few weeks with HW.=25c. and at the same time the epileptic attacks disappeared and had not returned two years afterwards, but during one year he had two slight attacks of vertigo.

Otitis in Early Childhood.

Barth (Archives of Otology) found that 80 per cent. out of 600 infants ill with various affections had a lesion of the middle ear. In autopsies the membrana tympani was usually found intact, and the more remote parts of the ear were not involved during acute middle ear inflammation. It is not always wise to open the mastoid cells in a child, if the only symptoms are swelling and redness of the upper and posterior portion of the external meatus. The middle ear may be inflamed and contain pus, yet the membrana tympani show no alteration other than bulging at some point.

In order to keep an opening made in the membrane free, while acute symptoms are present, the author places a crystal of chromic acid directly in the opening. This leaves a smooth round opening which heals readily.

WISHART.

The Ontario Medical Library Association.

The 13th annual meeting of the Association was held in the Library Rooms on June 28th, the President, Dr. J. F. W. Ross, in the chair.

The number present was not large, but included a great many of the members most interested in the welfare of the library.

The reports submitted by the secretary, treasurer and curator were very encouraging, giving evidence of increasing growth and usefulness of the library. Letters received by the secretary from the profession throughout the Province requesting information have been many. A circular letter sent to all the medical practitioners whose addresses could be obtained, in reference to the advisability of approaching the Legislalation for an annual grant, was responsible for their increased interest. In this connection we are glad to learn that a deputation waited upon the Premier and presented a petition asking for Government aid, and that it was favorably received. Though nothing has been granted as yet, the President, Dr. Ross, assures us that next year a grant will probably be made which will materially help to make the library even a greater success than it has been in the past. The Board take this opportunity of thanking those who, by their signatures, gave their assistance in this matter. In a short time the association will be able to send copies of the By-laws and Catalogue, now in course of publication, to the members of the profession. At present, however, the attention of city members is drawn to the fact that their annual dues ($2.00) should at once be forwarded to the treasurer, Dr. H. A. Bruce.

Books are sent to medical men throughout the Province on their paying express charges both ways, and returning them within two weeks. This is a privilege secured to the profession at large through the kindness of the Ontario Medical Council in granting the association rooms in which to store their books.

The Curator, Dr. Powell, reported that 161 new volumes and three cases still unopened had been added to the library during the past year. Dr. Powell is a member of the American Association of Librarians and is enabled to secure duplicates from other libraries in exchange. The Secretary, H. J. Hamilton, will be glad to give further information to those writing for the same.

At a meeting of the Board of Directors held on July 4th, Dr. Ross was again elected President; Dr. R. A. Reeve, 1st Vice-President; Dr. A. A. Macdonald, 2nd Vice-President; Dr. G. H. Carveth, 3rd Vice-President; Dr. H. J. Hamilton, Secretary; Dr. H. A. Bruce, Treasurer; D. N. A. Powell, Curator, and Dr. W. J. Wilson, Assistant Curator.

PERSONAL.

Dr. G. N. Fish (Trinity '98), who is retiring from the staff of the Home for Incurables, was yesterday afternoon presented with a gold-headed cane, a silver-mounted umbrella and an ebony-backed hat brush. Mrs. Colonel Hamilton and Miss McTavish made the presentation, on behalf of the inmates and staff.

Dr. Alex McPhedran has removed to his handsome new residence, 151 Bloor St. West.

Dr. R. S. Thornton, Deloraine, has been elected Grand Master of the Grand Lodge of Manitoba.

Dr. E. B. Oliver (Trin. '98) has been appointed Demonstrator of Pathology and Bacteriology in the Sioux City Medical College.

The sincerest sympathy is felt for Dr. W. H. and Mrs. Harris, of Parkdale, in the death of their only little girl, aged 8 years.

Dr. H. C. Wrinch (Trin. '99), of last year's House Staff, St. Michael's Hospital, was married recently to Miss A. J. Breckon, of Merton. Dr. and Mrs. Wrinch leave this week for British Columbia, where the doctor will labor as a medical missionary to the Indians in the Skeena River District. A man of sterling worth and ability, we wish him the same success in his new field that has attended him in the discharge of his duties in Toronto.

Drs. E. S. Ryerson, H. S. Hutchinson, Paul L. Scott, and A. J. G. McDougall, recent graduates, have been appointed House Surgeons to the Hospital for Sick Children for the ensuing year.

Drs. F. W. Marlow and Lees have been appointed House Surgeons to St. Michael's Hospital. Dr. McKenna, of last year's staff, will act as superintendent during the absence of Dr. R. J. Dwyer, in Europe.

A volume of over 1000 pages, beautifully illustrated, of original contributions to the science of medicine has been dedicated to Dr. W. H. Welch, Professor of Pathology in Johns Hopkins, by his pupils, on the 25th anniversary of his doctorate. We notice the names of several Canadians among the contributors—Dr. W. G. McCallum, Dr. T. S. Cullen, and Dr. L. F. Barker.

Despatches from the seat of war in South Africa continue to give great praise to Lt.-Col. Ryerson for his services as Red Cross Commissioner in South Africa. Dr. Ryerson sailed for home on July 4th.

Dr. Wm. Goldie has removed to 84 College St., the house recently vacated by Dr McPhedran.

Dr. Allen Baines, of Simcoe St., has sailed for Europe, where he will spend the summer.

BOOK REVIEWS.

POST MORTEM EXAMINATIONS.—METHODS AND TECHNIQUE.

By John Caven, B. A., M. D., (Toronto L. R. C. P., (London), Professor of Pathology, University of Toronto Medical Faculty. Illustrated. Price $1.00. J. A. Caweth & Co., Toronto.

This little work contains nine chapters.

The first chapter deals with the equipment and preparation for a post mortem examination, mentioning the outfit ordinarily required for both the section and for the bacteriological examination. This chapter also has an excellent paragraph on the care of the hands of the operator and the treatment of post mortem wounds.

The second chapter, dealing with the care of the cadaver, the opening and closing of the body etc, is particularly good. We know of no work on the subject which treats of this important matter in so practical a manner.

Chapter three deals with the proper method of keeping records.

Chapters four and five treat of the examination proper under two headings—inspection and section. The proper method of making a complete examination of all the organs is taken up in the thorough and systematic way one would expect from an operator of the skill and experience of the author.

Excellent chapters are also devoted to examinations in cases of poisoning and of suspected infanticide.

The book concludes with a chapter on the preservation of tissues, and Cullen's rapid method of making sections for microscopic examinations, and a table of weights and measurements of organs.

Throughout the book shows evidence of originality and there is a complete absence of padding. It would be difficult to imagine more substance compressed into less space. In fact in at least one instance we think the author errs in being too brief, viz., in dealing with the bacteriological examination of the dead body. We are also surprised at the omission to mention the use of formaldehyde in aqueous solution in the chapter on the preservation of specimens, though this is mentioned incidentally in another part of the book. The capacity of the stomach as given in the table—from ¾ to 1½ pints we believe is quite below the normal. These, however, are very minor matters and do not detract from the general usefulness of the work.

Altogether the book forms an admirable guide to the subject with which it deals and can be confidently recommended. An able and energetic worker and a brilliant teacher; those of his medical friends who know him best will agree with us that the author has published all too little from the storehouse of his wide experience.—H. B. A.

A TEXT-BOOK OF PRACTICAL THERAPEUTICS.

With especial Reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis. By Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. With special chapters by Drs. G. E. de Schweinitz, Edward Martin, and Barton C. Hirst. New (8th) edition. In one octavo volume of 796 pages, with 37 engravings and 3 colored plates. Cloth $4.00; leather $5.00, net. Lea Brothers & Co, Philadelphia and New York.

This is the eighth edition, of this most timely and up-to-date treatise, giving many of the newer non-proprietary drugs, with a very valuable section devoted to therapeutics and treatment, in which the author does not vaunt specifics, but suggests the most rational remedies giving his reasons for their use. Another feature—the comparative dosage table—is useful. The old apothecaries' weights are given with their equivalents in the metric system. There is a growing "cult" which effects to despise medicine as a curative agent; true, we cannot arrest death, but we can certainly ameliorate suffering and lend to nature (the vital processes) a helping hand. As Dr. Hare says, "A good physician is one who having pure drugs knows when to use them, how to use them and, equally important, when *not* to use them."

This book is one of the very few which the student will buy in his under-graduate days and keep at his elbow all through his life of practise, as it is eminently common-sense and free from *theoretical* padding.

T. C.

NEW BOOKS.

A Manual of Obstetrics, by A. F. A. King, M.D., Professor of Obstetrics and Diseases of Women in the Medical Department of the Columbian University, Washington, D. C., and in the University of Vermont, etc, In one 12mo. Volume of 612 pages, with 264 illustrations. Cloth, $2.50, *net*. Lea Brothers & Co., Publishers, Philadelphia and New York.

The eighth edition of this work, somewhat enlarged and improved has just appeared. As a text-book for students it is most valuable. It is written in a style clear and intelligible. The reader is impressed with the idea that the writer is not a theorist only. Before the book is half read, the author has our confidence and we are willing to trust his opinions, for we feel that they have been formed not in the study but at the bedside, most of them probably in the early morning, in the company of at least one parent in distress.

The chapters on the "Mechanism of Labor" are particularly pleasing. They should make clear to a student of ordinary care the relations of the different parts of the child's head to the points of the canal through

which it passes during labor. The author has not done that which many have succeeded in doing—hopelessly beclouding the above subject in an attempt to make it very clear. On such subjects as the etiology of puerperal septicæmia, treatment of hæmorrhages, antiseptics in obstetrics, his doctrines are sound and his teachings safe.

His treatment in some of the departments of the work has been anything but exhaustive—for example, the chapter on "Instrumental delivery." The subject, however, is put plainly, and enough has been said. This book should be well to the front as a text-book for students. It will certainly be interesting and useful to the practitioner.

D. G. G.

PROGRESSIVE MEDICINE—VOL. II, 1900.

A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in Jefferson Medical College of Philadelphia. Octavo, handsomely bound in cloth, 401 pages, with 81 engravings Lea Brothers & Co., Philadelphia and New York. Issued quarterly. Price, $10.00 per year.

This volume is quite up to standard and worth its price to any one for the sake of the single article in which he may be specially interested. W. B. Coley's chapter on Surgery of the Abdomen, including hernia, will appeal to any surgeon. J. G. Clark, of the University of Pennsylvania, under the wide head of Gynaecology, contributes what is really a series of most useful monographs on such interesting subjects as hermaphroditism, Endometritis Dolorosa, Hemorrhage in Uterine Myoma, Streptococus Pyogenes in gynaecological diseases, and other subjects most tempting to the reading practitioner. Ophthalmology is treated by Edward Jackson, while Medicine is in the hands of Stengel of the University of Pennsylvania, who brings up to date such modern subjects as Diseases of the Blood, Diathetic and Metabolic Diseases, Diseases of the Glandular and Lymphatic System. J. T. F.

Sajou's Annual and Analytical Cyclopædia of Practical Medicine, Vol. V. Philadelphia, The F. A. Davis Company. Toronto, Carveth & Co., 1900.

This fifth volume—from Methyl-Blue to Rabies—is to hand. What we have within as to previous volumes may be truly repeated as to the present one. The reader gets the kernel and gist of up-to-date serial medical literature, arranged and digested, in the smallest possible space. The work is invaluable as a handy reference.

We note with gratification, the reference by the editor to the demise of our Dr. Graham. It is pleasant to be reminded of the way in which our kind and beloved friend was regarded, and is remembered by scientific men across the line.

We endorse the work most heartily. J.L.D.

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ORIGINAL ARTICLES.

ACUTE MASTOID SUPPURATION WITH PRESENTATION OF CASES.*

By PERRY G. GOLDSMITH, M.D., Belleville.

In the necessarily short time given to each paper it is obviously impossible to attempt any discussion which would include the anatomy, symptomatology, pathology and treatment of acute mastoiditis. I will give merely brief notes on three cases that have come under my notice within the last year.

1. Male, aged 50, while blowing his nose during a bad cold felt something suddenly snap. This was accompanied by the most intense pain in the ear but no discharge came externally. The pain was very great for some hours when the discharge first appeared at the external auditory meatus. Boracic acid powder was used freely but the discharge persisted. His wife having a severe earache some days following, I was asked to see her and after relieving her by opening a bulging drumhead, was asked to see the subject of this article for the first time.

On examining the ear the canal was found blocked by a large mass of boracic acid powder through which pus was trying to burrow out. After freeing the canal with a syringe I examined the drumhead and found a perforation situated behind the umbo and slightly below. I remarked on the seriousness of a running ear at the time, telling him that it might involve the mastoid in spite of all that could be done. The treatment consisted of placing small gauze strips in the canal in order to facilitate drainage, the cleansing of the ear frequently with a syringe used gently, and attending to the naso-pharyngeal vault. Yet the discharge went on in spite of everything, including the use of alcohol and other antiseptic astringents. Enlarging the opening in the drumhead the pus increased, welling out from the perforation as fast as one could wipe it away with a cotton-tipped probe. About two weeks after I first saw him he began complaining of a dull aching over the head radiating from the ear, and there was now for the first time tenderness over the mastoid,

* Read before The Ontario Medical Association June 1900.

found only on deep pressure especially over the tip. I used ice freely at once but the pain increased and some swelling of the mastoid was noticeable if the two sides of the head were compared from behind. There was also a sagging down of the posterior superior wall of the canal next the drumhead.

I advised operative measures at once but the patient and his friends would not think of it saying as many others similarly situated have said that it was only a running ear. I persuaded him however to go with me to Toronto where we consulted Dr. Jas. Macallum, who concurred in the diagnosis and agreed that operative measures were certainly indicated. We returned, and as the patient demanded it, I waited a few days longer, but the continuation of the discharge with a deep boring pain in the mastoid region, so bad at nights that he could not sleep, with a slight rise of evening temperature, induced him to allow an operation to be done.

This was done by Dr. Macallum and myself and the whole mastoid was found full of pus and necrotic debris necessitating the removal of the entire pneumatic spaces and the tip of bone and exposure of the lateral sinus and removal of granulations and debris. The discharge from the ear stopped at once and the patient made a rapid and uneventful recovery.

In this case I take it, the sudden opening of a blocked Eustachian tube while blowing the nose severely, caused a rupture of the drumhead. Infection subsequently took place and the discharge occurred, the egress of which was retarded by too much boracic acid.

2. Male, aged 57, farmer, came to me not so much because he was ill himself but because his wife was coming regarding a lachrymal abscess. After I examined his wife and evacuated the abscess he asked me to look at his ear. He gave the following history. Two weeks previous following an intense earache of 24 hours duration a discharge appeared in the left ear, giving immediate relief from pain. The discharge persisted and increased in amount, the odor not having been at all foul at any time. He suffered great pain at times on that side of the head making sleep almost out of the question. This pain in his head radiating from his ear and mastoid region, became at times almost unbearable and was accompanied by great depression and weakness and frequent spells of feverishness and chills. In fact he was thought to be going into typhoid fever. The pain however, became co-incident with a swelling in the temporal region with marked œdema over the mastoid, and the discharge markedly lessened.

On examination I found the left side of the head projecting out as it were, the left ear and temporal muscle being very prominent. Pain was very marked on deep pressure over the mastoid antrum. In fact the patient would cringe from me every time I would press the bone. The discharge was of a thick yellowish nature unmixed with blood, and not of a foul odor. The superior and posterior wall of the canal next the drumhead, markedly projected into the lumen of the canal. Temp. 98; pulse 65; resp. 18. The left pupil sometimes was smaller than the right and enlargement of the retinal veins but no optic neuritis was present.

I advised operation at once but they would not consent to its performance until the next day. His condition was unchanged except for the left eye, where marked dilation of the pupil replaced the previous con-

traction. The usual curved incision close to the auricle was made and pus found at the top of the ear coming from a sinus leading to the antrum and extending forward into the temporal fossa. This pocket was well cleaned and the incision extended to the top of the mastoid. After retracting the periosteum from the mastoid the anterior and posterior lips of the wound were well separated. The mastoid cortex was rapidly opened with mallet and chisels while pus and necrotic debris were exposed to view. The superficial cells were scraped away and the mallet and chisel used to extend the opening into the bone. In extending this backwards I came on to a misplaced but thrombosed lateral sinus. This was opened and a small clot turned out, but except some sharp haemorrhage which was easily controlled by gauze packing, did not cause any delay. After enlarging the opening in the bone I proceeded to obliterate all the pneumatic spaces and clean out the antrum which was full of granulation tissue and debris. I followed the dead bone upwards and inwards and liberated an extradural abscess containing two drams of foul pus. The wound was cleansed by flushing with a solution of formaline. After thoroughly swabbing the antrum with a solution of zinci clor., 40 grs. to the ounce, a suture was placed in the upper part of the wound and iodoform gauze strips packed into the wound. I might also say that owing to necrosis in the tip of the mastoid I pared the bone from the sterno-mastoid muscle and removed the tip.

For the succeeding five days one could not have wished things to progress more favorably. The wound was dressed once and no discharge was found coming from the ear, and the condition of the mastoid wound was all that could be desired. The temperature, pulse and respiration taken every three hours were normal; appetite good; was free from all pain and slept well; the pupils were equal; slight facial paralysis owing to tight packing. On the morning of the 5th day his temperature was 101, pulse 104, respiration 20. I dressed the wound and found it perfectly sweet. He had a slight chill before noon, but at two o'clock in the afternoon the temperature was 99, pulse 78, but at 5.30 it rose to 104, pulse 84; chills and vomiting, and very marked drowsiness, but no headache. I examined the wound again and was satisfied it was all right. The drowsiness, vomiting (without taking food), high temperature and slow pulse, certainly looked like a collection of pus somewhere in the brain substance and I considered the advisability of trephining the tempero-sphenoidal lobe for exploratory purposes. The fundi of the eyes were not characteristic of anything abnormal except enlargement of the retinal veins in the left. The urine was examined and I think showed the real seat of the trouble. Sp. gr. 1007; albumen 35 per cent., acid, amount 20 oz., deposit of hyaline granular and pus casts and connective tissue debris. The feet and eyelids soon became puffy; the amount of urine decreased in spite of everything I could do; pilocarpine, intestinal elimination and hot pack were only of temporary benefit and the patient passed into coma and died, no urine having been voided for the last 24 hours. Temp. ranged from 104^{3} to 96°.

I examined the head, post mortem, and found the brain clear, the wound healthy, and hard bone in every direction.

Now, I think in this case we had a case of interstitial nephritis of some years duration which was owing to some exciting cause, possibly the anesthetic, which was equal parts of chloroform and ether, associated with an acute attack of nephritis or some absorption of pus possibly through lateral sinus, may have taken place, leading to a pyonephritis or pyæmia. I do not pretend to say which it was, and leave the question open. Suffice it to say the man died and I thought it hard luck. I was unable to get a photograph of the case and did not get a measurement of his head, but I have since learned that he was obliged to wear a hat when I first saw him that was three inches larger than his usual size.

3.—Man æt 43 consulted me for a pain radiating from the ear and extending over the left side of the head.

The previous history given me was as follows:—Five weeks previous to my seeing him during an attack of la grippe, he complained of an intense ear ache which lasted for nearly a week. Nothing seemed to allay the pain, not even that abominable linseed poultice that is so frequently put on and around the ear for ear-ache. At the end of a week the ear began discharging, giving great relief to the pain. To use the patient's words, it ran splendidly for about two weeks, when it lessened greatly, but the pain in the head increased, great pain and swelling over the mastoid being present. The pain being worse at night and was relieved by morphine pills freely administered. A swelling now appeared above the ear and extended forwards over the zygoma to the outer part of the orbit. This was poulticed for days and subsequently blistered, but of no avail.

I now say the patient for the first time. His head was tied up in a poultice and he looked the picture of misery.

On examination I found a deeply inflamed drumhead showing a small recent perforation situated in the posterior and lower quadrant. There was no discharge in the canal worth mentioning, none at any rate in the cartilaginous meatus. There was some oedema over the mastoid, much less than what there was previously I am informed, and very doubtful tenderness on deep pressure over the antrum. It was difficult for the patient to notice any material difference between the pressure on each mastoid. There was marked tumefaction in the region of the temporal fossa, a sagging downward of the posterior superior wall of the canal was also noticeable. It was not well marked, however. Viewed posteriourly the left ear and mastoid were very prominent; temperature 99, pulse 88. I advised operation at once but in deference to patient's request, delayed 24 hours, meanwhile using ice freely to the mastoid and temporal region. This gave great relief from the pain.

Expecting to find pus in the temporal fossa I began the incision well forward, but close to the upper part of the auricle, extended it in a curved direction downwards and backward close to the ear as in the ordinary mastoid incision. Hemorrhage was very free but was easily controlled by clip forceps; pus was found as anticipated, coming from the temporal fossa which it had reached by perforating the bone. I now made an incision at right angles to the anterior end of my preliminary incision, upward for about one inch, in order to more easily clean the temporal fossa.

I stripped the temporal muscle well forward and downward in order to give free vent to any pocket there might be present. The periosteum was denuded from the bone under the muscle but no rough bone was found. Having temporarily packed this region I proceeded to strip the periosteum from the mastoid, and open the antrum. The antrum lay very deep and chisseling to it sclerosed bone had to be removed. It was like ivory in places and was probably caused by repeated attacks of otitis media he had while young. There was but little necrosis in the mastoid cells proper but the antrum was filled with granulation tissues and dead bone. This was removed, the cavity scraped with a sharp spoon until hard bone was encountered in every direction, swabbed with zinci chloridi, grs. 30-$\frac{3}{}$ and irrigated with 1-2500 formaline solution. The upper parts of the incision were stitched and a small gauze drain placed under the temporal muscle and the remainder of the wound packed with iodoform gauze and a dressing applied.

The patient has slept well ever since; there has been no pain whatever; no difficulty in opening the jaws as there was previously; no rise of temperature, in fact it has been normal ever since the operation. The tumefaction in the temporal region has gone and the dressings are hardly stained after being left on for three or four days.

The peculiarity in this case was the absence of the two cardinal symptoms, viz.:—*pain on pressure over the mastoid and the presence of discharge.* Yet the tumefaction mentioned above, the history, and the general condition of the patient were sufficient indications for operation.

A Case of Chronic Suppuration of the Antrum of Highmore with Suppuration in the Ethmoidal Cells.

Male, aged 38, consulted me for what he termed catarrh, the predominating feature of which was one-sided nasal discharge.

The history was as follows:—When very young he had an attack of neuralgia of the face which got well by the use of hot applications. This was followed by a discharge of yellowish matter from the right nostril which has persisted ever since. In fact his friends tell me that he always had a drop of matter on the end of his nose and was often spoken of as "wipe your nose." Nothing seemed to be of any use and as he grew older the discharge increased and the right nostril became almost completely occluded. He was unable to sleep on his back owing to spasms of coughing that it caused Bending over to pick up anything would cause a gush of pus from the nose. On examination I found pus in large quantities in the nose. This being wiped away, pus was seen to be coming from the middle meatus of the nose and the region of the opening of the antrum. This was increased by leaning forward or tilting the head downward and to the opposite side. The middle turbinated bone was very large. With a post-nasal mirror no pus was seen on the walls of the vault or posterior end of the turbinals. There was no tenderness of the teeth nor had there ever been any to his knowledge. They appeared quite healthy. Transillumination showed opacity in the right antrum but none in the frontal sinuses. I was unable to catheterize the

antrum but by aspiration with a Politzer bag, patient at same time swallowing, I could increase the pus in the nose very materially.

My diagnosis was pus in the antrum and probable infection of the ethmoidal cells. Under cocaine anæsthesia and suprarenal extract, I removed a large part of the anterior end of the œdematous middle turbinal, and with cutting forceps, punch like, removed the remainder and opened the anterior ethmoidal cells. Here rough bone was encountered and with a curette I scraped away a good deal of dead bone and granulation tissue. At the patient's request I did not then open the antrum. One week following, he had free nasal breathing, almost no post nasal discharge and was able to sleep on the back comfortably. I again saw him. He informed me that no one could imagine how much better he was.

I now opened the antrum with a trocar, through the inferior meatus of the nose, under the inferior turbinal bone. Pus did not come as I expected but on syringing forcibly it began to come very freely. The amount was very large considering the usual size of the antrum.

I continued to irrigate the cavity daily for a week and throw into the antrum a 10 per cent. solution of protargol and at times 10 grs. to the oz. of zinc chlor. At the end of a week there was practically no discharge whatever, though I was satisfied it would collect again. The patient went home as he said, cured, but in two or three weeks the discharge again came from the nostril relieved by irrigation of the antrum. I wished to do a thorough operation through the canine fossa and scrape the cavity clean, draining through the nose, but he objects to that, saying he may have it done in the fall.

I did not drain through a tooth because I do not believe the abscess to be of an alveolar origin and did not care to sacrifice a good tooth when as good a result could be secured through the nose, though drainage will not cure a case of such long duration. Thorough curetage and packing I think is the only means of curing the case, though there will probably always be some discharge from the ethmoidal cells.

A CASE OF ANKYLOSIS FOLLOWING INJURY.

By Dr. J. T. Clark, Toronto.

In presenting this case it is not my intention to attempt a paper on ankylosis or its treatment. I wish merely to give the history of the case and show you the patient in the hope that something may be learned from the discussion. Up to the time of his accident Mr. Pearce was a healthy laboring man. He is now 50 years of age. Family history and early personal history reveal nothing bearing on the case. For nine months before this accident he was working for a butcher in the village of Huntsville, Muskoka.

On the night of December 26th, 1898, he was out with a sleighing party, sitting in the front of the sleigh with his back to the driver and leaning over. It seems that the driver took advantage of his position and sat on his shoulders for some time until the sleigh struck a hole in the road when both were thrown out with considerable force, alighting in the same relative position on the road. It was found that Pearce was unable to move either hand or foot but was quite conscious all the time. There was a slight scalp wound in the left temporal region. He was removed to Dr. Hart's hospital in Huntsville. In about fifteen days he had recovered the use of his right arm and says that for a few days he could move it in any direction, then a severe pain came between his shoulders and all down the right arm to his finger tips and power to move it was gradually lost again, except flexion and extension at the elbow. He gradually recovered some power over the legs so that in three weeks from the time of accident he was able to get out of bed and into a chair without assistance, and in two weeks more could shuffle about the ward but could neither dress nor feed himself. Seven weeks after the accident he left the hospital and came to Toronto, and I saw him for the first time on February 22nd, 1899. His condition then was as follows:—

Patient quite stooped at the shoulders. Was very deliberate in his movements, seeming to dread the pain if a joint were moved too far. Was very tender on examination of the affected joints and when passive movement was attempted. The joints of the feet, ankles and knees were quite free, as were also those of the spinal column except those concerned in rotation of the head. The movement of the hip joints was limited allowing him to take a step of about twelve inches. There was very little adduction or abduction except what was obtained by tilting the pelvis. There was no noticeable atrophy of the thighs or legs. Patellar reflexes were exaggerated. The shoulder joints were so firmly ankylosed that the arms were literally pinioned to the sides and they were so tender that very little scapular movement could be obtained on attempting passive movements. By fixing the scapula a small amount of movement at the joint

* Read before the Toronto Medical Society.

could be made out but it gave him great pain. The elbow joints were all right but the wrists and all the joints of the hands were perfectly solid with the exception of the articulation where the metacarpal bones of the thumbs join the trapezii. These were moderately free. The inferior radio-uluar articulations were ankylosed in semi-pronation.

The deltoid muscles were very much atrophied, the arms quite thin, the muscles of the forearm atrophied but from the middle of the forearms to the finger tips the subcutaneous tissues were greatly swollen so that the fingers were nearly three times their natural size; the circulation was very poor, the skin tense, blue, and cold. There was no sphincter paralysis at any time; the heart and lungs were in good condition, the bowels very much constipated, the appetite good.

I tried to get him admitted to the Hospital as a city patient but failed on account of the accident taking place when he was working in another municipality, so I hardly knew what to do with him. Just about that time a prosessional masseur came to me looking for work, so I sent him this patient and instructed him to perform passive movements to the affected joints and massage to the hands, arms and shoulders. True to the nature of his kind, he promptly took full charge of the case, located the *precise seat* of the trouble, high up between the shoulders (having made the remarkable discovery that in this man the seventh cervical vertebra makes a greater prominence than the others), and proceeded to cure him with electricity, leaving out the massage and passive movements as unnecessary. After three months of that treatment he came back to me with the ankylosis a little firmer, although there was more scapular movement on account of the tenderness gradually wearing away, and the hips were considerably freer which I attributed to the fact that he had unknowingly practised the necessary passive movements in walking daily a mile to and from the professor's office for his electricity. This time I succeeded in getting him admitted to Grace Hospital where consultation was had with Dr. McKenzie, Dr. McPherson and Dr. J M. Cotton, and operated on May 29th, 1899, about five months after the accident. Both Dr. McKenzie and Dr. Galloway were present at the operation and gave me valuable assistance and advice. Chloroform was given and the adhesions forcibly broken down, making reports loud enough to be heard several rods away. Cold packs were applied to the parts for twelve hours after operation, and massage and passive movements were begun on the third day, and continued vigorously for an hour each day. He was also encouraged to work the joints all he could himself.

This gave very encouraging results, so one week later he was etherized and the process repeated. After this the use of the shoulder was soon entirely recovered, the muscles started to grow, and as the massage improved the circulation in the hands and forearms, the ordema gradually subsided and the joints of the hands and wrists steadily improved, but continued so far from perfect that on July 20th, (about two months after the first operation) he was again anaesthetized and these joints again broken down, followed by the same after treatment as before. The result is as you see—not perfect to be sure—but he has two quite useful hands, capable of handling any rough tools I sincerely hope to hear an

interesting discussion on the subject by the experienced gentlemen who form this association. I should like very much to learn,—

1. What was the cause of the ankylosis? It was undoubtedly of the fibrous variety which the books tell us is the result of joint disease or of keeping an inflamed joint too long at rest.

2. What is the usual expectation as to cure or otherwise in such cases?

3. Can anything further be done to increase the usefulness of this man's hands?

A CASE OF INCARCERATED OVARY.

HORACE C. WRINCH, M.D.,
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Miss A. B., aged 26. Six years ago the patient developed a hernia in the left groin after severe exercise. The pain was severe at the time and persisted, recurring at frequent intervals ever since. A truss was ordered but only worn occasionally for a short time, then discontinued altogether. The pain was sometimes worse during menstruation but not always. Various nervous symptoms developed, especially headaches, which were frequent and severe. Menstruation has been irregular. During the last eighteen months there has been frequent and distressing vomiting which was treated by lavage, but without success Three months ago the patient was admitted to St. Michael's Hospital and placed under a course of dieting and kept absolutely at rest, but with only slight improvement in the gastric symptoms and none in those of a nervous character.

There being a great deal of pain from the hernia it was decided after two months to perform the operation for radical cure. This was done, when it was found that the hernia was of the inguinal variety and that the left ovary and tube were within the sac and firmly adherent to it. Both were removed (the ovary being small and misshapen) and the wound closed in the ordinary way.

Healing was by first intention and recovery rapid. Full diet was commenced on the fourth day after operation. The vomiting did not recur. The patient was discharged on the thirtieth day after operation, their being only some slight nervous symptoms remaining.

SELECTED ARTICLES.

ON THE PRESENT STATUS OF THERAPY AND ITS FUTURE.*

By LEWELLYS F. BARKER, M.B., *Tor.*,
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The only means we have of judging what the future has in store is to review the history of the past and to view accurately the present tendeney or drift The history of therapy is the history of medicine, for medicine began with therapy. It is not my purpose in the time allotted to me to undertake a recital of this history; I shall have to be content simply with an enumeration of epochs and perhaps a hint at the periods of progress.

Historians are gradually collecting for us the data concerning the earliest therapeutic efforts. The history of the earliest medicine shows of what a jumble these efforts consisted. With the dawn of intelligence the sympathy which was gradually evolved through the sense of pain led the primitive man to attempt to relieve the pain of his fellows. You recall the lines of a literary medical man :

> " The hunt is oe'r ; the stone-armed spears have won ;
> Dead on the hillside lies the mastodon.
> Unmoved the warriors their wounded leave ;
> The world is young and has not learned to grieve.
> But one, a gentler sharer of the fray,
> Waits in the twilight of the western day,
> Where 'neath his gaze a cave-man, hairy, grim,
> Groans out the anguish of his mangled limb.
> Caught in the net of thought the watcher kneels,
> With tender doubt the tortured member feels,
> And, first of men a healing thought to know,
> He finds his hand can check the life-blood's flow.

Disease is as old as man—it is only the knowledge of disease that is recent. In the fiercer physical struggle for existence which must have characterized the life of our primitive forefathers, external wounds and manglings, as well as physical injuries due to exposure to the weather, to extremes of cold and heat, must have been common. Crude surgical procedures evolved by herdsman or shepherd began to be applied to man. The diseases peculiar to the female sex were first treated by the wise old women who had lived through the mysteries of the life of that sex. Of the nature of disease in general and particular the ghost of a true idea did not exist. Obscure diseases were regarded as instances of demoniacal possession. Prayers, chants and sacrifices to healing goods were univer-

* Address in medicine delivered before the Ontario Medical Association, Toronto, June 6th, 1900.

sal. Devils were exorcised chiefly through the medium of priests. The priestly art and that of the physician were often combined. In China, in India, in Chaldea, in Egypt, the development of early medicine followed the same fundamental principles, though each country manifested special peculiarities.

The medicine of the Greeks interests us as much as any. Philosophers all, with an intense longing for the good, the true and the beautiful, they have left behind them records which in many respects make modest even the reader of to-day. In Heraclitus, Democritus and Empedocles and, above all, in Hippocrates we meet with much that is practically good in modern medicine and philosophy, especially as concerns the individual life, the ideal development of the personality. Though infants in anatomy and physiology and almost entirely ignorant of the nature of specific diseases, the Greek physicians had accumulated an account of symptoms and conditions and a therapeutic armamentarium that surprises the modern who for the first time reads his Hippocrates. The treatment of fractures and dislocations, the trepanning of the skull, the tapping of the abdomen and chest, the mode of dealing with hernia show us how daring they were in surgical measures. Had they known how to control hæmorrhage, who can tell what operations these cool-headed Greeks might not have devised. They were far less happy in the more difficult field of internal medicine. Most of their ideas about internal diseases were wrong, but some of their descriptions of individual cases are magnificent. Concerning the therapy of internal diseases, Hippocrates had many sound principles, and described some good practice. He recognized the healing power of nature and urged his followers to aid and follow nature—"quo natura vergit, eo tendere oportet." In Hippocrates can be found the tenets of many of the famous schools which have followed him. The principle of "contraria contrariis" and that of "similia similibus" are both in his pages, but wiser than some who came after him he limited himself to neither. "According to its kind and the circumstances underlying it, a case must sometimes be treated by agents acting unlike the disease, sometimes, on the other hand, the treatment must be undertaken by agents acting similar to the disease. The reason for this lies in the weakness of the human organism." Perhaps the strongest part of the therapy of that day was in the emphasis laid upon diet, gymnastics, bathing and mode of life in general. Who but has read and appreciated the Charmides of Plato, that exquisite dialogue in which the principles of Greek temperance are embodied. For a long time after Hippocrates this personal hygiene was accentuated. The visits of young men to the temples of Æsculapius, there to be instructed as to how to live, were long continued. Walter Pater's appreciation of a visit of this sort described in Marius the Epicurean will be recalled by many of you.

In Galen's time theory and gross empiricism reigned supreme. The idea of the four elements, heat, cold, dryness and moisture influenced the giving of drugs. These elements in a sense corresponded to the four cardinal juices of the human body, blood, mucus, yellow bile and black bile. The therapeutic ideas of Galen, like his medical ideas in general, dominated medicine for a thousand years.

With the advent of Vesalius and the development of human anatomy one might have hoped for rapid improvement in therapy, but this improvement was not immediately forthcoming. Even Harvey's discovery of the circulation of the blood and Malpighi's studies of physiology and pathology were not immediately fruitful in a therapeutic way. Paracelsus alone stands out as a reformer in internal medicine and therapeutic effort. He bravely opposed the authority of Galen, recognized the fallacy of trusting to knowledge obtained from books and relied rather upon pe sonal observation and experience. Analysis shows, however, that even Paracelsus did but little to advance the actual knowledge of therapy.

About this time there was a wide-spread awakening in all the natural sciences. Descriptive natural science and systemization ruled the thought of the day. During the period which followed a series of medical systems developed, based upon one-sided theories and badly based generalizations; Haller's doctrine of irritability, Brown's doctrine of stimuli, Hahnemann's homoeopathy, Gall's phrenology, along with many other schools came at this period to their development.

Real progress in therapy dates from the time when natural science became an exact study. Rigidly accurate observation followed by mature reflection has led to experimentation. Medicine of this sort is only a century old. It was almost synchronous with the widening of chemical discovery and of the working out by physicists of the principles which underlie many natural phenomena which up to the time had been entirely obscure, that microscopic studies began to be prosecuted seriously. Histology developed with Bichat; the cell doctrine with Schleiden and Schwann, pupils of the celebrated Johannes Müller. The French and Germans became enthusiastic for pathological anatomy. Rokitansky counted his autopsies by thousands. The older physicians like Sydenham and Bœrhaave, found worthy successors in Louis, Schönlein, Traube, and Wunderlich.

Virchow's cellular pathology established an entirely new view-point whence disease-processes could be observed. Charles Darwin's work on the "Origin of Species," Herbert Spencer's philosophy and Huxley's researches in comparative anatomy stimulated investigators in all sciences to examine into the evolution of phenomena, to consider the order of events in organic processes. Enormous strides continued to be made in physics and chemistry, and the new facts discovered in these branches permitted of the development of physiology by Ernst Brücke, Carl Ludwig, Emil Du Bois Reymond, Helmholtz and Claude Bernard. Caspar Fr. Wolff, Karl von Baer, Balfour, and His unravelled the mysteries of embryonic development. Improvements in the microscope and in microscopic technique led to a deeper penetration into the mysteries of histology and microscopic anatomy, normal and abnormal, than the most enthusiastic could have hoped for a few years earlier. New instruments of all sorts were devised. Auenbrugger's percussion and Laennec's auscultation revolutionized physical diagnosis. The ophthalmoscope, the laryngoscope and the speculum, had much to do with the establishment of the specialties of ophthalmology, laryngology and gynæcology

In the fight against infectious diseases a great victory had been won in the discovery of vaccination by Edward Jenner. Later on Henle's ingenious speculations concerning the nature of contagious diseases set many great minds in motion. With Pasteur and Koch came illumination. The infectious agent in the majority of infectious diseases is now known, can be cultivated in pure culture and can be utilized in animal experiment.

Physiological and pathological chemistry have been unveiling the mysteries of the fluids and solids of the body; pharmacology and toxicology are investigating the influences of drugs and poisons upon these. The application of Lister's happy idea with regard to wound infection, aided by the American-born boon of anæsthesia and a bloodless technique, totally changed the aspects of surgery. Wound infection, if not entirely an event of the past, has been enormously reduced. The holiest places of the body are to day invaded by the surgeon's knife; the abdomen, the thorax, the joint cavities and even the brain are frequently and fearlessly explored. The heart, the last organ of man to be made accessable to surgical treatment, can now be sutured with success.

But more time must be spent in glancing at the past; it is necessary at once to look at the present and to divine, if it be possible, whither we are being led.

As a result of development along so many diverging lines the study of modern medicine is concerned with a field so wide that he who glances over it, cannot fail to be appalled by its magnitude. No single intelligence can in these days be familiar with the details of growth in all its parts; no single individual can hope to work efficiently in more than one or two of its subdivisions. The complexity of the work demands a division of labor, and most is gained from the efforts of men who, familiar with the general trend of progress in the whole field, concentrate their activities upon some one corner of it. Individual workers in the special medical sciences are pushing their investigations at the moment with unwonted zeal. Anatomists are ever devising new technical methods; the cells formerly believed to be very simple "elements" are found to be highly complex organisms; parts of the body as, for example, the nervous system, are having their true cellular nature for the first time revealed; the structural basis of the intrinsic mechanisms of individual cells is in process of demonstration; the relations of the basis in one cell to that in other cells are being found out. Physiology, so long interested in the hydraulic principles of the circulatory apparatus and the muscle-nerve preparation, is being diverted into new channels of research, utilizing in its experiments the newly discovered principles underlying chemical and physical phenomena. The oxygenating and reducing processes which occur on the body, the various stages of anabolic and catabolic metabolism, the phenomena of secretion and excretion, the interrelations of the various bodily activities, the functions of the different neural complexes, the mechanisms of defence and adaptation—these are some of the subjects with which physiologists are now busying themselves.

In pathological anatomy and physiology just as strenuous efforts are being made as in the other fundamental departments Our ideas

concerning inflammation have been so much modified that we are advised by some of the ablest pathologists to give up the term altogether. The nature of inflammatory exudates is still under discussion; what elements are of hæmic and what of local origin are disputed; the great cleft between the acute inflamations and the chronic processes associated with production of new connective tissue is still unsatisfactorily bridged. The ætiology of tumors, as yet unsolved, stimulates the embryologist on the one hand and the parasitologist on the other to renewed exertion. New tumors are being discovered; old ones are being regrouped; finer and finer distinctions between benignancy and malignancy are being drawn with results eminently satisfactory for the practical surgeon.

The therapeutic hopelessness that pathological anatomy inspires is more than compensated for by the faith in the future of therapy and prophylaxis directly derivable from a consideration of the teachings of pathogenesis. As pathological processes are traced further and further back to the earliest stages when function begins its deviation from the normal and the causes underlying those deviations gradually become recognizable the means of prevention and the indications for treatment become obvious.

Bacteriology appears to have done for us the greatest work of which it is directly capable; further advances in a similar direction promise to be made rather through the aid of chemistry and physics. The study of protozoan invasions is yet in its infancy and may have surprises in store for us. One cannot help but feel that we are on the brink of the discovery of the infectious agent in syphilis and the infectious fevers, but who can prophesy what the nature of the agent will be—animal: vegetable or less highly organized "ferment."

We have some reason to be proud of the present status of public hygiene. There never was a time when the general public was more industriously educated concerning the importance of hygienic measures than at present—never a time when the laity was more thoroughly exercised over this topic. Sanitary associations are innumerable; public health departments are everywhere demanded. Meat, milk and vegetables are inspected; impurities in food and drink are more and more excluded through the vigilance of the law. Contagious diseases are diagnosed early and isolated by city officials. Government sanitaria are in sight. Quarantine and disinfectant measures are more rigidly and fortunately more intelligently employed than ever before. Great epidemics are being choked at their starting places, the only mode in which they can satisfactorily be combatted. A fire can be extinguished by a fire department in its incipient stage—once well under way it is beyond the control of human interference. There is good prospect that ere long the world will be through with those tremendous outbreaks of contagious disease of bacterial origin which from time to time have so devastatingly swept over both Western and Eastern civilizations. Thanks largely to Anglo-Saxon enterprise the back yards of the world in which the embers of epidemics smoulder are being rapidly cleaned up; this together with the rendering ever more infection-proof of the materials to which the flame

of infection spreads bids fair to make the whole subject if not entirely, at least largely, a matter of history.

The present position of personal hygiene is a subject upon which we have less reason to congratulate ourselves. In principle we know much, in practice we do but little. Concerning climate, fresh air, diet, clothing, bathing, work, rest and recreation there is perhaps less dearth of information than negligence and inattention in performance. We behave hygienically when we are forced to do so, but not as a well planned order of life. Above all on this continent we have as yet to learn how to live and the problem here is less simple than elsewhere, for life here, especially in the great centres, is life at its most complex. Nowhere else is the strain so great—nowhere else does it so rapidly increase in tension. It must be a nervous system other than that which has been and that which is that will stand it. That nervous system may be now envolving, but in the meantime the unfit are succumbing in numbers even more alarming. Moderation in all things and elimination of the non-essential from our lives would do much to tide us as a race over the transition period.

Perhaps the most significant movement at present observable in medicine is the beginning of the application of the newer ideas of physics and chemistry to the solution of biological questions. One has ever to be on his guard lest he expect too much from the introduction of new methods of approaching problems, but in this instance the principles underlying are so fundamentally important and have already worked such marvelous transformations in the mode of thought and activity of chemists that we are justified in expressing great hope for the future in their use by medical investigators. The doctrines of van't Hoff and Arrhenius are pregnant with great possibilities. van't Hoff's brilliant generalizations with regard to the behavior of solutions are found to hold good by a whole series of workers—the laws of osmotic pressure appear to be strictly analogous to the laws of Boyle, Gay-Lussac and Avogadro concerning gases. The theory of the dissociation of electrolytes—salts, acids and bases—into their components, the ions (cations and anions), which we owe to Arrhenius, affords a satisfactory explanation of an enormous number of facts hitherto unintelligible. The newer doctrines not only correlate facts hitherto unconnected, but they have shown the way to new lines of experimentation and have acted as a most powerful stimulus to original research. While it is probably not true that chemical activity is due solely to ions and never to whole molecules, yet the number of chemical reactions which according to the physical chemists are purely ionic is very great, including certainly the majority thus far investigated. The studies of Kahlenberg and True on the toxic effects of acids and bases on plant life indicate that it is the hydrogen ion of the acid and the hydroxyl ion of the bases which is the active constituent. The significant experiments of Loeb on the power of muscle to absorb water in the presence of acids suggest the value of the physical-chemical method of thought in physiology. The work of Krönig and Paul upon the effects of disinfectant substances has made probable the ionic nature of this influence. The introduction by Dreser of the conception of the osmotic work done by the kidney and a calculation of the same in foot

pounds is of the deepest interest, even if his interpretation of his results as it would appear, has to be somewhat modified. The practical results in sight from the clinical studies by the method of physical chemistry undertaken by Hamburger, Köppe, Koranyi and others are being thankfully received by clinicians all over the world. Loeb, of Chicago, has recently interested us by proving the poisonous effects of pure solutions of common salt, and though his experiments have been upon lowly organisms, I should consider the medical man rash who continued to give a patient of low vitality large doses of ordinary salt solution when he can just as well introduce a solution in which the holding in a variety of salts corresponds more nearly to that of normal serum. Almost startling, too, is the assertion of Loeb that the eggs of echinoderms can be fertilized in the absence of spermatozoa by magnesium ions. If the phenomenon of fertilization—that *sanctum sanctorum* of physiological processes begins to be invaded by physical chemistry—what may we not expect from that science in the future. It would take too long to refer to other work in this field—to the constant reciprocal relation existing between chlorides and achlorides of the blood and urine, to the newer ideas on the occurrence of œdema, to the speculations concerning so-called ion-proteids. Suffice it to say, that the promise for the future in pathogenesis and in pharmacodynamics is much brightened by the advent of physical chemistry. Were a medical student, suited by heredity and environment to look forward to the higher things in medicine, to ask me the question, "How can I best fit myself to make real advances in knowledge in medicine and therapy during the next twenty-five years?" I should say, "In addition to a thorough medical course, arm yourself with sufficient mathematics and gain a thorough theoretical and practical training in the methods of physics and chemistry and especially in the principles and methods of what is called 'physical chemistry.' After this turn your attention to the solution of medical problems." Not that the doctrines of van't Hoff and Arrhenius will be able to clear up all difficulties—the doctrines themselves may even be found to be only helpful hypotheses and later be supplanted by others less faulty, but all our knowledge is but relative, and at present new knowledge can probably be easiest reached by working with the methods referred to.

The conviction is not infrequently expressed that surgery having gone so far cannot have many great conquests still before it, but when we review recent progress it would seem hazardous to deny the possibility of still more interesting advances. The extensive use of local anæsthesia since the introduction of cocaine in 1884 has led to striking modifications in surgical technique. The general narcosis produced by ether and chloroform together with perfected hæmostatic methods had a tendency to encourage slow operations. With cocaine anæsthesia and infiltration of the tissues with nearly indifferent fluids surgeons have been again compelled to operate more quickly and with greater efforts at precision. The discovery of the X ray has made bone surgery much more accurate work than it could ever have been before. Most noteworthy, perhaps, in modern surgery, are the operations which are now undertaken upon the liver, gall-bladder and bile ducts. These together with gas-

trointestinal surgery have elevated abdominal surgery to even a higher rank than that attained by pelvic surgery through the activity of the gynæcologists. Progress can certainly be expected still in the treatment of surgical diseases. Max Broedel in Kelly's service has just shown us by a study of its blood-vessels the safest way to cut into the pelvis of the kidney.

The sharp line between medicine and surgery is breaking down. The two domains overlap at their boundaries and the importance of medical men and surgeons working together is becoming more and more appreciated. The establishment of a journal, the *Mittheilungen aus dem Grenzgebiete der Chirurgie und Medizin*, is an indication of the feeling which exists. The surgery of the future aside from emergency cases will be largely done in hospitals. Surgeons, to attain the necessary technical skill and familiarity with normal and pathological living tissues, must stand for years over an operating table. A trained corps of assistants and nurses is essential for the more difficult problems which now fall to the lot of the surgical specialist.

Compared with the brilliant achievements of the surgeon the therapeutic efforts of the physician are felt by most medical men as well as by the laity to be somewhat disappointing. In spite of the extraordinary keenness of diagnostic power which has been developed in internal medicine the painfully exact studies at pathological histology and in physiological and pathological chemistry, the wide-spread activity in pharmacological and pharmacodynamical experiment and the indefatigable efforts of the manufacturing chemist to supply new drugs, the view is prevalent and rightly so that in the treatment of internal diseases "we have more to hope for the future than to entrust to the present." The explanation is obvious. The age is one of doubt. Authority now less than ever before counts for anything. There is a lively fear of empiricism, an insatiable desire for rational explanation. Pathological anatomy stimulated to brilliant diagnosis, but, for a time at least, it encouraged therapeutic pessimism. Skoda, the type of a therapeutic nihilism even went so far as to say "we can diagnose disease, describe it and get a grasp of it, but we dare not expect by any means to cure it." In such a temper drugs of unknown physiological action cannot conscientiously be set to act upon bodily tissues in disease in which we are ignorant of the deviations from the normal of the chemical and physical processes going on in the cells. The death blow came first to polypharmacy; to-day, with many physicians, pharmacotherapy, as a whole, is almost moribund. Ask the prescription chemist how his work now compares with that of fifteen or twenty years ago. He will tell you that he is lucky if he fills ten recipes to-day, where he formerly filled a hundred. The druggist in the village or small town may still receive an occasional prescription which orders ten or fifteen varieties of herbs, but the fine old concoctions known to our fathers have almost entirely disappeared. It is seldom in this day that more than one or two drugs are prescribed at one time and these too often because "the patient must have something" A dozen drugs altogether suffice for the pharmacotherapeutic armamentarium of some of the most eminent physicians on this continent.

The reaction against the use of drugs, together with the development of the expectant method of treatment, permitted of a more accurate study of the natural cure of the disease than was before possible. Consistent homoeopathists who pushed their minimal dosage to such a degree that any conceivable drug effect was prevented did much, though unintentionally, to illustrate the healing power of nature unaided. Dietl's studies of pneumonia, treated without blood-letting, convinced him and the world that the effects of therapeutic interference in this disease had been greatly over-estimated.

Marked as have been the advantages derived from these therapeutic revolutions I cannot help but feel that the time has come for a more hopeful outlook for therapy in internal medicine. More thought among the best men might with advantage be given to it. Not that a whit less attention should be given to diagnosis or to pathological study—only through these is a successful therapy thinkable—but may we not interest ourselves more in the therapeutic measures of proven value which are really at our disposal. I am fully aware that some practitioners fail to properly diagnose their cases, that there are those who have but little scientific knowledge of disease, and it is these usually who possess the largest magazines of misplaced confidence in drugs. It may even be said to be certain that the majority of men in practice who leave it temporarily to undertake post-graduate work, would be benefited more by instruction in the wealth of diagnostis aids recently put at our disposal than by a course in therapeutics. That the skilled diagnostician, however, can be of greater service to his patients if he put the same keen, well-directed intelligence into motion with regard to treatment that he uses in diagnosis instead of stopping short at the diagnosis and shrugging his shoulders when therapeutic effort is mentioned, must be patent. As Leyden put it: "The task of therapy is to help the patient as far as possible with the means at its disposal at the time; it dare not postpone the treatment to future discoveries. Specific therapy, long looked upon as that alone which is safe and worth striving for, is deprived of its absolute dominion; instead of 'curing diseases,' our task is altered to 'making patients well.'"

I cannot help but think that one of the causes of therapeutic pessimism among the better men in the profession lies in the fact that when therapeutics is spoken of most men call pharmacotherapy disproportionately into mind. It is because they are insufficiently known and appreciated that dietotherapy, climatotherrpy, hydrotherapy, kinesiotherapy, electrotherapy and psychotherapy are not ranked with pharmacotherapy, and yet, in the majority of cases with which physicians deal, one or more of these is of far greater importance than treatment with drugs. Psychotherapy especially has a great future. Not until physicians become better phychologists and learn better how to apply psychic methods in the treatment of disease can we hope for the disappearance of such psychic epidemics as that represented by Christian science. In the near future psychopathogenic mechanisms should be carefully studied in order that psychoprophylaxis can have a wider field.

What the future of pharmacotherapy will be, who will be rash

enough to judge? That it will be great seems certain. That it cannot soon be great seems sure. Synthetic chemistry has supplied us with a host of new bodies for experimentation. Only a very small percentage of these have thus far been found to be of value. Antipyretics, analgesics and hypnotics especially are being multiplied. They have to be slowly tested on animals, then on healthy human beings and last of all on human beings in diseased conditions before their actual value can be ascertained. The effects of drugs like acetone-chloroform and urethane astonish us, however, and whet the appetite for further discovery.

No single system of therapy is likely soon again to hold general sway. *Contraria contrariis* and *similia similibus* have ceased among scientifically cultivated men to be a universal guide of therapeutic action. The biologically fundamental principle of Pflüger and Arndt, namely that "minute stimuli, excite to vital activity, stimuli of medium strength favor it, strong stimuli inhibit it, strongest abolish it, it being, however always an individual matter whether a given stimulus will prove to be feeble or one of medium strength or maximal," associated with the Ritter-Valli law that "diseased organs are in a state of heightened excitability" has been made by Oscar Schulz the basis of his "organ-therapy." Very valuable as the concept appears to be, medical men, with a caution born of experience, will be loath to accept it or any other generalization as an all-sufficient maxim.

The revival of organotherapy or opotherapy, as the French designate it, is a marked feature of present treatment. One of the oldest methods, having been employed long before the Christian era, opotherapy began with an attempt to produce an aphrodisiac effect by administering the genital organs of the respective sex to the individual who desired stimulation. It is rather curious that the present revival was inaugurated by Brown-Sequard, the composition of whose elixir vitae you know. Organotherapy has, however, this time a rational basis in the conception of an internal secretion, deduced by Brown-Sequard from the studies of Claude Bernard. The production of experimental cachexia thyreopriva and the bringing of the proof that the transplanted thyreoid would save an animal from the disease suggested the possibility of the use of thyreoid substance in myxœdema and cretinism with the marvellous results which most practitioners have by this time been permitted to observe. The chemical analyses of Baumann showed that an iodine compound in the normal thyreoid is an important element in the gland.

This "*Parenchymsaftherapie*," as Virchow designates it, is obviously a substitution-therapy—a restoration to the diseased body of chemical substances, the removal of which from the normal body gives rise to symptoms of disease. It is in atrophic conditions of the gland that the therapy is valuable. Myxœdema and cretinism are diseases which correspond to the "altruistic atrophy" of Hansemann, while Basedow's disease is thought by many to be an example of "altruistic hypertrophy." Had the principles underlying thyreoidtherapy been earlier recognized we should not have expected benefit from the administration of thyreoid extract in hypertrophic conditions of the gland.

The French are busy testing the effects of thyreoid-therapy on the

healing of fractured bones. The experimentation is still in progress and it is too early yet to say much regarding it.

Ponfick's remarkable case, which makes it appear possible that the hypophysis and the thyreoid may be compensatory glands, will doubtless stimulate to further study.

With the advent of a successful thyreoid therapy, the notoriety hunters soon introduced organic extracts of the most various sorts. Cardin, cerebrin, hepatin were launched and vauted. Examination of the manufacture of a certain prostate extract showed that it was being prepared from female animals! Such empirical attempts were worse than useless. They represent a return to the primitive.

With certain of the organs we are, however, provided with a rational basis for experimentation. Mering and Minkowski proved the disastrous effects upon the animal of extirpation of the pancreas. The diabetes which followed extirpation could be prevented by transplantation of pieces of pancreas. Yet for reasons not satisfactorily understood pancreas therapy has not been made practically useful.

Again, the effects of removal of the adrenals have been carefully studied. Addison's disease is believed to be largely the result of loss of adrenal substance. Unfortunately, the administration of adrenal extract, while it may alleviate some of the symptoms of Addison's disease, has no effect on the others. The attention paid to the adrenal of late by physiological chemists has, however, been most fruitful. The studies concerning the blood-presture raising constituents are extremely valuable. The active substance has been isolated and its chemical nature studied. The work of Abel and others upon epinephrin is furnishing most interesting data for future use.

Rhinologists are using adrenal extract as a vaso-constrictor in the nose. Fresh from the German press comes a careful paper by Stoeizner (in Heubner's clinic), detailing a large series of cases or rickets, markedly benefited by adrenal extract. He finds that the cranio-tabes, the sweat, the delayed coming of the teeth, the irritability of the vaso-motor system, the general restlessness and excitability, the curious smell of the urine, are all very markedly improved by the treatment. The softening of the thorax is frequently benefited. The spasm of the glottis and other symptoms of tetany, however, generally appear to remain uninfluenced by the adrenal extract. The improvement can frequently be made out during the first week of treatment. An amelioration of the symptoms goes on rapidly for a few weeks, later on more slowly.

The spleen and bone-marrow extracts which have been introduced increase the white and red corpuscles of the blood, possibly owing to the nuclein which they contain. That hypophysis extract is of no value in acromegaly would not be surprising, if acromegaly should turn out to be, as some investigators believe, rather an instance of "altruistic hypertrophy" in the sense of Hansemann than one of "altruistic atrophy."

One of the most recent advances claimed in opotherapy is the feeding of ovarian substance as a substitution-therapy in cases (1) where the ovaries have been removed at operation, and (2) at the climacteric to relieve the phenomena characteristic of that period. The substance is

given in Germany in the form of Landau's oophorin tablets. Loewy and Richter report that this ovarian substance has a remarkable capacity for increasing the oxygenating power of the body-cells in cases in which the ovaries have been removed. Their protocols are very convincing. Whether or not the therapy will be useful in preventing the obesity so characteristic of so many such cases we must wait to see, but the Germans feel confident that it will.

The advances along the lines of opotherapy are sufficiently indicated by the foregoing experiences. Physiology, experimental pathology, physiological chemistry, pharmacology and pharmacodynamics must lead the way.

In the struggle against infectious diseases a rapid extension of the powers of the physician is observable. The resistance of human beings as a whole is being increased not only by the slow method of natural selection, but by a more rapid mode through personal hygiene. Prophylactic inoculations have been multiplied since the work of Pasteur. The cholera inoculation, that for pest and that for typhoid appear to be Flexner in Philadelphia is now experimenting with a prophylactic against the bacillus dysenteriæ so deadly in its effects in the Philippine Islands and Japan. The introduction of Behring's serumtherapy in diphtheria has undoubtedly greatly reduced the mortality of that disease, indeed, diphtheria is now scarcely a disease to be dreaded. Aside from the serum against diphtheria, however, there is as yet little of practical value to acknowledge from this side.

The antidiphtheric serum is an antitoxic serum. That introduced against tetanus is also an antitoxic serum To be ranked with these two is probably also Calmette's serum against snake poison. Tetanus serum is only preventive, not curative, possibly owing to the fact that the antitoxine injected subcutaneously or into the blood cannot reach the toxine when once the latter has combined with the protoplasm of the nerve cells. Even intracerebral introduction of the antitoxine is not fully satisfactory for obvious reasons. All the other sera which have been introduced, namely, those against cholera, the streptococcus, pneumococcus, the bacilli of plague, anthrax and typhoid fever, are not antitoxic sera but antibacterial sera. They do not neutralize the poison which the bacteria produce, but have the power of killing the bacteria in the body of the patient and of dissolving them up. Not a single one of these sera is as yet practically useful as a therapeutic measure.

Ehrlich's studies make it probable that with these anti-bacterial sera at least two bodies are necessary for successful action: (1) the *inter-body* or *immunizing body*, and (2) the *end-body* or *complement* (formerly called *addiment* by Ehrlich). The latter is present in normal serum and is the true dissolving body, but it can act only when it is bound to the bacterial cell by means of the immunizing body. The anti-bacterial sera are rich in the immunizing body. It may be possible that they are insufficient owing to there not being enough of the end-body present. Wassermann is now making experiments in this connection. He hopes that by increasing the amount of end body or complement available that

the anti-bacterial sera may be rendered valuable in the treatment of disease in human beings.

Had not this paper already become too long it would have been interesting to refer to the progress making in the treatment of conditions of autointoxication and of the so-called constitutional diseases, but I must forbear.

From what has been said it is obvious that we have no reason to be discouraged as regards the future of therapy, but rather cause for hope and enthusiasm. We have learned the secret of progress and some formulæ for daily action. The secret of advance lies in the consciousness of the fact that it is the orderly application of the well-trained intelligence to medical problems that alone yields valuable results—not the haphazard guess work of the ignorant and untrained mind. Prolonged technical education and systematic research lead to therapeutic advance. In daily life, in the application of discoveries already made, the quack and the routinist physician, with the healing power of Nature behind them, will cure many cases, but we can be sure that greater success and especially greater mental satisfaction will attend the efforts of the physician well educated in the various medical sciences who, thinking *all around and through his case*, arrives at the most accurate diagnosis possible and gives the patient the benefit of a well-planned, conscientious treatment, utilizing every means which will tend to his cure or relief. If this physician have a specific he will be glad to employ it; if radical cure be impossible he will not neglect the palliative; if at last the exitus lethalis cannot be prevented he will at least see that the end is euthanasic.—*John Hopkins Bulletin.*

STERILITY IN THE MALE.

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When a husband and wife who desire a family find themselves without offspring after some time of married life, as a rule the wife is urged to seek medical advice. The physician whom she consults is frequently, all too frequently, satisfied with making a gynecological examination. He makes his diagnosis and arranges his treatment according to the data furnished by such an examination, which reveals to him a more or less likely cause of the sterility. Such a procedure is always unscientific and frequently the cause of much unnecessary suffering. For what is the use of treating the wife for sterility if nothing is known concerning the condition of the reproductive organs of the male?

The results of a number of careful clinical as well as pathological investigations have proven the male to be the cause of the sterility of matrimony in over 30 per cent of all sterile matrimonies, and this fact alone suffices to discredit all attempts at treat of the female alone in cases of sterility, unless it is determined that the male is in full possession of normal organs with normal secretions.

The sterility of the male may be of two different kinds—it may be due to impotentia coeundi or to impotentia generandi, to an inability to perform the sexual act, or to a lack of normal secretions.

The discussion will be limited here to the latter of these defects, to the impotentia generandi, and more especially one kind of this species Under the head of impotentia generandi two conditions are to be classified, the one being aspermia, the absence of discharge in the sexual act, the other being the more frequent and more important condition of azoospermia. I shall discuss here only the latter.

The condition of azoospermia is characterized by the discharge of a fluid in the sexual act which, though absolutely like the normal fluid in color, consistency, odor, and quantity, differs from it by the lack of the most essential factor, the spermatozoon. It is perhaps not superfluous to emphasize the fact that nothing but a microscopic examination of the fluid can enable us to make a differential diagnosis between the normal and the sterile semen.

We are sufficiently well informed as to the frequency of this condition of azoospermia as a consequence of various morbid conditions. After bilateral epididymitis the combined statistics of Gosselin, Godard, Liégeois, Terrillon, Bergh, Neisser, Noeggerath, Kehrer, Lier and Ascher, as collected by Finger, show azoospermia in 207 out of 242 cases. Recent investigations of Benzler, however, are more favorable. In his cases on 38.7 per cent were sterile, whereas the rest had offspring. Other diseases which are regarded as important in the etiology of azoospermia are diseases of the testicle, as chronic inflammation, tuberculosis, syphilis,

tumors, congenital displacements, traumatisms; furthermore, chronic diseases, as alcoholism, obesity, diabetes, general tuberculosis, and to some extent and for a shorter or longer period of time acute febrile diseases.

The facts just mentioned are pretty generally accepted, but the local conditions in the sexual apparatus which are the direct causes of the azoospermia are still little known. The text-books contain very little information on this point, and what little they do contain but too frequently appears copied from generation to generation, and some of the statements are *prima facie* improbabilities.

Under these circumstances I thought it necessary to start a series of investigations of my own. Through the kindness of Prof. Ludvig Hektoen, of Rush Medical College, I have received for examination the sexual organs of one hundred males. I wish to avail myself of this occasion for a public expression of my best thanks to Professor Hektoen, without whose aid it would have been impossible to obtain the necessary material for such an investigation.

The organs were taken from a series of post-mortems without special selection of the cases, in order to reach an approximate idea of the frequency of azoospermia and its pathology in the general run of cases. Taking into account how unreliable the statements of most patients concerning former infections are, I have paid no attention whatever to their histories, and have relied exclusively on the pathological data, as they cannot lie. The post-mortems were all performed by Professor Hektoen or by his assistants, and the painstaking and thorough methods of these gentlemen have placed the pathologic diagnosis beyond doubt.

In the pathology of azoospermia two great classes are to be differentiated, one comprising the azoospermia due to lack of production of spermatozoa, the other comprising the azoospermia due to the obstruction of the system of sperm channels. I shall consider the latter of these two classes first.

Obstruction of the sperm channels has never been observed anatomically in the tubuli recti, in the rete Halleri, in the vasa efferentia and the coni vasculosi, but from here on in in every portion of the sperm channels, the tail of the epididymis, the vas deferens, the ampulla, the seminal vesicle, the ejaculatory duct. An obstruction can be caused, as in every hollow organ, either by compression from without or by loss of epithelium and obliteration from within.

Since 1847, when Gosselin gave his first report, the compression from without has usually been represented as the most important mechanical obstruction in the way of the seminal flow. But aside from Gosselin's own observations, which were made with the help of injections and which are open to serious objections, no proof has ever come forward in favor of this theory. And when we take into consideration the strength and rigidity of the muscular wall of the seminal channel in the tail of the epididymis, its natural coiled up condition, and especially the possible and probable sources of error in experiments with injection, it appears more and more likely that this theory, though hoary with age, is nevertheless untenable because anatomically unproven. Not until the compression from without produced by the well known thickening of the

epididymis, the remnant of an acute epididymitis, has been proven anatomically to produce obstruction can we consider this theory well established.

It is, of course, an entirely different matter when we have to deal with a tubercular or gummatous destruction of an entire portion of the vas deferens together with its cavity. Here we have obstruction, but the obstruction is produced less by a compression from without than by the discontinuity of the epithelial tube.

The interruption of continuity of the epithelial channel of the vas deferens is a most potent and not at all infrequent factor in the production of azoospermia, as my own observations as well as those of Simmonds have proven. These obliterations of the vas deferens are actually observed and are so readily demonstrated that it appears remarkable that they should not have been recognized long ago as the true cause of obstruction in the vas deferens, in the place of the compression from without which has been handed down from author to author and has been accepted without controversy.

The complete stages of this obliteration show a vas deferens which is composed only of the external and middle muscular coats, while the mucosa, and frequently also the internal longitudinal muscular coat, are transformed into a mass of cicatricial connective tissue without a trace of epithelium. In two males in whom I found such complete obliteration, the findings in the other parts of the sexual apparatus warranted the diagnosis of tuberculosis in one and of syphilis in the other case. In two additional cases in which such occlusions were found, neither syphilis nor tuberculosis could be demonstrated. The stages preceding complete obliteration I have repeatedly had occasion to observe. In the more advanced stage the epithelial lining is defective, the cells being very small, more like endothelium, and not standing in two rows as they normally are The lumen of the canal also shows changes, being transformed into a narrow and often twisted and distorted cleft. In other cases the epithelial lining is almost or entirely perfect, but the wall just outside the epithelial lining shows complete absence of the normal tissue of the mucosa, and instead of that a ring of hyaline tissue poor in nuclei and forming a rigid layer under the epithelial lining. We have to deal, then, with strictures of the vas deferens, or merely with changes in the wall apt to disturb the normal function.

In the portion of the vas deferens where it joins the seminal vesicle we find normally an enlargement of the size of the vas and of its lumen. This portion, the so-called ampulla of the vas deferens, may be completely occluded, as I have observed in two cases: so that a cross-section, instead of showing the numerous epithelial sinuses, shows nothing but a mass of fibrous cicatrical tissue in a ring of muscular bundles. Sometimes remnants of the normal glands are seen detached in the wall of the ampulla, slightly dilated, but without any communication with the vas deferens, and therefore never containing spermatozoa. In another number of cases the same hyaline zone which has been described in the vas deferens has been observed surrounding the epithelial lining of the ampulla.

Obliteration of the seminal vesicle in itself does not mean any direct obstruction to the flow of the semen from the testicle to the urethra, as the semen might pass on directly from the vas deferens into the ampulla, into the ejaculatory duct and the urethra. But from physiological experiments of Rehfisch and others it is likely that obliteration as well as removal of the seminal vesicles interferes seriously with the normal function. I have observed total or partial obliteration of the seminal vesicle in three cases. In other cases I have found the hyaline degeneration of the wall of the seminal vesicles which corresponds to the same process in the vas deferens, and may be the anatomic explanation of cases of spermatorrhea, the seminal vesicles losing by the hyaline degeneration their normal ability to expand with the increasing amount of their contents.

The next portion of the channel through which the semen has to pass is the ejaculatory duct, which is embedded in the tissue of the prostate. Finger has claimed to have observed cases of obstruction by obliteration of this part of the channel by the formation of scar tissue following posterior urethritis with small abscesses of the prostate. But his descriptions must on closer examination appear very unsatisfactory and doubtful, though they are much repeated in his own writings and much quoted by other authors who have never themselves seen such obstructions. The objections which I have myself been compelled to raise against Finger's statements are the following:

1. In his macroscopic descriptions he mentions the presence of areas of cicatricial tissue on the colliculus seminalis by which the openings of the ejaculatory ducts have become occluded. In his microscopic descriptions, however, it is just the orifices of the ducts which are not obstructed, whereas the deeper parts show an apparent obliteration.

2. Finger does not say anywhere that he has examined the prostates, which form his material, on series of sections. It is true that sections may show the orifices of the ducts, also the more distant parts of the ducts and an apparent obliteration between the two. But unless the prostrate gland has been cut in complete series of sections, it is absolutely impossible to state whether the duct really is obliterated or whether its course follows such a curve that parts of it which are contained in one section do not appear in other sections at all. I may mention here that I have examined every one of the prostates with ejaculatory ducts, which form my material, on complete series of sections—about three hundred sections to each of the ten prostates examined.

3. As proof of the obstruction to the seminal flow Finger mentions furthermore that in the cases which he believes to have found obliterated he has observed the ejaculatory ducts filled with spermatozoa. I have examined ten prostates, in none of which the orifices of the ejaculatory ducts were occluded, and in every case where the testicles produced spermatozoa the ejaculatory ducts contained them in larger or smaller numbers, so that this appears to be a normal condition of the dead prostate.

4. Finger's statement that he found the ducts dilated behind what he believed to be an obliteration is worthless, because this dilatation also is

a normal condition due to some terminal or post-mortem processes which fill the ejaculatory ducts with spermatozoa.

The tissue surrounding the ejaculatory ducts has been found sclerosed, poor in nuclei, undergoing hyaline degeneration, by Finger, myself and others, but it is not probable that this alone is sufficient to give rise to an obstruction of the flow of semen. In my anatomical observations at least these hyaline ducts were filled with semen just as well as the normal ones.

It is possible that the ducts being embedded in the non-yielding, firm tissue of the prostate may be compressed from without by the formation of tumors of cystic or adenomatous or fibroid or mixed nature, or by abscesses of the prostate. I have observed both obscesses and tumors of the prostate, but none of them produced a sufficient compression of the ducts to give rise to obstruction.

The obstructions farther on in the male sexual tract, though important for the question of sterility in the male, do not come under consideration here as they do not produce azoospermia. The obliterations which are anatomically demonstrated to be productive of azoospermia are those of the vas deferens in its various portions down to the ampulla, and of the seminal vesicles

As to the etiology of these obliterations and the stages preceding them, the structure of some of the most pronounced cases characterizes them sufficiently as tubercular. In other cases, however, their origin is less clear. But as the changes are of a chronic, not of an acute, nature, as they correspond to chronic changes produced by infections in other organs, there is little doubt that we have to attribute them to a similar causative factor. Taking into consideration the frequency of inflammatory affection of the vas deferens in gonorrhea and the absence of characteristics of any other infection in these cases, we are probably not far from the truth if we assume that these cases are due to gonorrheal infection. But it would be going too far to classify them all as gonorrheal cases, as other infections appear to be able to produce similar pathologic conditions. In the absence of bacteriologic investigation of these cases I do not wish to go further into this question.

Now an interesting question in physiology has to be raised. We know that usually, when the normally present excretory duct of a gland is obliterated, this gland undergoes speedy degeneration and we know from experimental as well as pathologic data that this holds true in glandular organs generally. The testicle makes a most remarkable exception in this regard. It has been demonstrated experimentally that after artificial obliteration of the vas deferens, produced by cutting and ligating the duct, the testicle does not always undergo atrophy. My pathologic observations as well as those of other observers, especially Simmonds, proved this to hold good also in cases of pathologic obliterations of the vas deferens. With the exception of the case of syphilis, where the testicle was also destroyed by the disease, all of my cases of obliteration of any portion of the vas deferens presented normal function of the testicles with enormous quantities of spermatozoa in the portions of the seminal channel located between testicle and obliteration. Even macros-

copically it could be observed that these portions of the vas deferens were dilated by a thick, whitish mass. If the physician keeps these observations in mind, he will find himself able to diagnose this condition of obstruction on the living subject, a point of the greatest importance with regard to a possible operative treatment and cure of these obliterations.

Ever since Gosselin's first publications the obstruction of the seminal channels has received the largest share of the attention of investigators, and the condition of the testicle itself has more or less been neglected. This may be due to the fact that the pathology of the testicle is so extremely difficult and complicated that what some authors consider normal senile changes, others ascribe to syphilis or smallpox, and others again to chronic general diseases or to local inflammatory disturbances.

So much, however, becomes evident, as soon as any number of testicles is examined, that deviations from the normal are extremely frequent. Another condition which makes the pathology of the testicle especially difficult in a consideration of the testicular origin of azoospermia is the fact that the seminiferous tubules show a great independence of each other, so that one tubule may present complete atrophy while neighboring tubules may be in the most florid and active condition. It is therefore necessary to examine many sections from many different parts of the organ before passing judgment on the physiological abilities of the gland. This necessity implies a very large amount of work, so that so far I have been obliged to examine more than 15,000 sections.

Without going too much into the minute details of the pathology of the testicle, I may state that there are two great classes of suspended or destroyed spermatogenesis, that with and that without associated symptoms in the connective tissue surrounding the seminiferous tubules. At the present stage of our knowledge of human physiology we can speak only of arrested or suspended spermatogenesis as long as we find any normal spermatogonia. Not until these too have disappeared and the sustentacular cells are the only remnants of the epithelial lining of the seminiferous tubules have we any right to assume complete and definite destruction of spermatogenesis.

In the small series of cases in which I have found aspermatogenesis without changes of the surrounding connective tissue, this lack of normal action in the testicle is in all cases a partial one, so that some portions of the testicle show normal activity while other portions show considerable changes of the epithelial lining. The pathologic tubules then present either a single layer of epithelium composed of spermatogonia and sustentacular cells, or in cases further advanced even the spermatogonia have disappeared and nothing but sustentacular cells are left. While in the other tubules all developmental stages of the spermatozoa can be observed, these pathologic tubules present not a trace of spermatozoa or even spermatocysts or spermatoblasts. Similar observations have been made by Cordes, but unfortunately his report becomes entirely inadequate just at this most important point, because he says nothing definite as to the changes in the surrounding connective tissue, which he mentions only casually. It is true that similar changes occur with and with-

out changes in the surrounding connective tissue; still there are marked differences, and certain types of aspermatogenesis which occur frequently with changes of the connective tissue never are observed without these. Cordes has not separated the two in his report and this mars the usefulness of his otherwise meritorious work for this particular part of the question.

The infiltration with fat which occurs in cases of suspended spermatogenesis without changes in the connective tissue, and which, as I may anticipate here, occurs also in cases associated with changes in the connective tissue, is frequent and often very marked. The observations of Cordes are very positive on this point and give clear evidence of the physiological occurrence of fat infiltration in the epithelium of the testicle. The amount, however, which is found in these cases can hardly be considered normal, as in many cases it amounts practically to a complete disappearance of the cell protoplasm of the testicular epithelium.

Neither age nor disease to which the patient has succumbed appears to have any influence on the production of aspermatogenesis without changes in the surrounding connective tissue. The condition has been observed in individuals as young as 24 and as old as 53 years, these men having died from various acute or chronic diseases. It is therefore not clear what is the cause of this aspermatogenesis in these cases.

In the second and much larger class of cases we find as the one pathologic lesson common to all cases of this kind the changes in the surrounding connective tissue. The most marked of these is the formation of a zone of hyaline tissue around the seminiferous tubules in the place of the normal flat connective tissue cells which form the physiologic sheath of the tubules. This zone of hyaline tissue cuts off the epithelium from its supply of nourishment, normally derived from the blood-vessels of the intertubular connective tissue. Its size varies from a scarcely noticeable thin line to a thick band, which by and by usurps the place of the entire seminiferous tubule.

Degenerative changes of the epithelium accompany the formation of the hyaline rings. In some specimens all of these changes occur simultaneously, in others only certain stages are present. Where the hyaline zone is thin we find the epithelium of the tubule either normal, even containing spermatozoa, or the spermatozoa are absent and we find only a few layers of epithelium, or even only one layer, the border-lines beween the cells frequently becoming indistinct. There is, however, a distinct cavity of the tubule which is sometimes filled with spermatozoa. With the enlargement of the hyaline zone the epithelial masses are pushed toward the center of the tubule, which appears narrowed, the epithelium itself appears lower, the nuclei become indistinct and may disappear completely. With the further encroachment of the hyaline zone the the epithelium is reduced to a very thin, flat layer resembling endothelium, and these tubules contain nothing but a few fragments of cells. The advancing hyaline zone becomes folded and wavy, resembling somewhat the hyaline zone of the corpus luteum of the ovary in its later stages. In the most pronounced cases the lumen of the tubules disappears completely, and instead of a channel lined with epithelium nothing is seen but a

more or less wavy and hyaline mass of tissue with very few nuclei, without any trace of normal testicular epitheluim.

These degenerative changes may occur in small portions of a testicle which in other portions contains normally active tubules, but they may also occupy an entire testicle, so that not a trace of normal epithelium is to be found. I have tried to make sure whether a testicle which does not present any acute inflammatory changes can present complete destruction of its epithelium by the hyaline degeneration of the interstitial tissue. I have examined one testicle, for instance, on more than 500 sections without finding one single epithelial duct, and from many testicles 200 and 300 sections have been examined with similar result. It becomes evident, therefore, that without any obstruction in the vas deferens azoospermia may occur by complete destruction of testicular epithelium and without discoverable syphilitic or tubercular disease. For just those cases which presented the most complete atrophy of the testicular epithelium gave no anatomic evidence of the nature of the process which had worked such destruction. Frequently the rest of the sexual apparatus was found absolutely normal, the epithelium of the epididymis perfect, the vas deferens open—no acute inflammatary changes anywhere.

The only other changes which now and then were found associated with the epithelial destruction were of an endarteritic nature, but were not obsereved regularly by any means. It is important to notice that where this atrophy did not comprise the entire testicle, but only parts of it, it did not appear in disseminated patches, but followed the indvidual seminiferous tubule in its entire extent from the albuginea to the hilus of the testis. It is therefore not probable that this atrophy is due to smallpox, for while it is well known, since the work of Chiari, that the orchitis of smallpox occurs in patches, it is also known that these patches are roundish, in the shape of small abscesses, rather than in the shape of stripes following the seminiferous tubules. It becomes also clear that these atrophic changes cannot be due to syphilitic vascular changes exclusively, because they so frequently are found to effect one or the other seminiferous tubule only, whereas interference with the vascular supply due to syphilis could not but afflict more than one tubule, a conclusion which is warranted by the normal anatomy of testicular vascularization.

It is perhaps necessary to mention that the rete Halleri, the vasa efferentia, and the epididymis have been found absolutely normal in most of these cases; but the vas deferens or the seminal vesicles frequently showed hyaline degeneration of walls associated with the hyaline zone present in the testicle. It is therefore more likely that the same process which led to this chronic affection of the vas deferens also affected some, or many, or all of the seminiferous tubules, reaching them not on the path of the circulating blood, but along the vas deferens—in other words, an infection which usually creeps along the mucous surfaces, very likely gonorrhea.

It is evident that the larger reduction in size of the active seminiferous tubules, the greater the possibility of interruption of normal spermatogenesis, and the more probable a condition of diminished numbers of

spermatozoa or oligospermia. Here also we find the anatomic basis of the clinical observation that when no spermatozoa can be found in the semen in the first specimen it is necessary to examine repeatedly in order to form a correct idea of the physiological abilities of the testicles.

The condition described here is most frequently bilateral, but may be more pronounced on one side than on the other. Both testicles may present complete atrophy due to this condition. Wherever this condition occurs, it can be recognized macroscopically, not necessarily by the size or consistency of the testicle, but by the whitish, homogeneous stripes on the cut surface of the organ.

Fuerbringer, the father of the scientific interpretation of these conditions, has advanced our therapeutic ideals by introducing the plan of the surgical investigation of the testicle and its excretory ducts. He has advised in certain cases to lay bare and excise the epididymis in order to investigate its contents. In a case of an obliteration of the vas deferens surgical interference does not appear hopeless. Experimental anastomosis of divided ends of the vas deferens has been practised successfully on the dog by Van Hook. It has been practised on the human being after the unintentional division of the vas deferens in hernia operations, but the success in these cases is of course much harder to prove.

If no dilatation of the vas deferens or the epididymis indicative of an obliteration is found, it would be correct to split the testicle and examine its cut surface; also to examine some testicular juice squeezed out from the cut surface. The uncertainty, which is the worst torture of patients afflicted with these troubles, can thereby be settled one way or the other in the most reliable manner possible. Suture of the split testicle is neither difficult nor dangerous.

Cases of azoospermia due to obstructions in some part of the vas deferens are much more hopeful and much more amenable to our treatment than azoospermia of testicular origin This much the crude outlines of the results of my investigations presented here are, I hope, well able to demonstrate. And if we can help only a few of the unfortunates afflicted with this kind of sterility, we shall have made another advance in the scientific treatment of a hitherto much neglected and little understood pathologic condition.—*Medicine.*

INTESTINAL ANTISEPSIS IN TYPHOID FEVER.*

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At the outset I assent to the view that typhoid "is no more primarily an intestinal disease than is smallpox primarily a cutaneous disease" (Osler), or lobar pneumonia is solely a disease of the lungs. It must, however, be conceded that in a majority of the cases of typhoid fever the seat of the principal infection is the intestinal tract. This being the case, there would seem to be naturally embraced in the symptomatic treatment of typhoid fever some form of intestinal antisepsis. Compared with the treatment by baths, or the importance of correct feeding and the judicious use of stimulants and good nursing, intestinal remedies occupy a subordinate position, particularly since the Brand method has been so generally adopted. Indeed, every detail of the former items of treatment is so vitally important that whatever I may say in favor of intestinal antiseptics is in no wise intended to disparage the use of these more efficacious human agencies. Hence, I do not claim that the antiseptic treatment deserves to be ranked as a specific method; neither have I any statistics nor startling testimonials to bring forward.

To address antiseptic remedies to the bacillus of Eberth or its toxins, or to the intestinal lesions, would, I believe, be futile. The claims put forth by some clinicians that typhoid fever may be aborted in this manner are sadly in need of confirmation. The principal indication for the use of antiseptics is the meteorism which owes its origin to decomposable material in the prima via. The normal antiseptic fluids in the intestines, particularly the bile, are present in diminished proportion in this disease, owing to defective hepatic secretion. This may tend to increase the amount of decomposable matter. From analogy, the digestive tract must similarly miss the hydrochloric acid which normally inhibits putrefactive changes. These reasons, coupled with the introduction into the system not uncommonly of an overabundant ailment, explain to some extent at least the occurrence of tympanites in this disease. Assuming milk to be the principal article of food, I would advise the use of HCl in small doses after each feeding, with a view to supplementing defective gastric secretion in cases in which meteorism is a pronounced symptom. In typhoid patients who are robust, the employment of calomel during the first few days of the fever is to be advised and encouraged. An agent of acknowledged worth as a hepatic stimulant, its value as a disinfectant of the gut, it must be recollected, is also considerable. Moreover, it serves to remove retained decomposable material, "and so places the bowel in a favorable condition for the subsequent maintenance of antisepsis." (R. H. Quill). I have repeatedly observed that its employment in this manner was followed by a milder course of the disease than is ordinarily encountered.

* Read before the Medical Section, College of Physicians and Surgeons, Philadelphia, Feb. 12, 1900.

It has been my habit for a number of years to prescribe intestinal antiseptics throughout in cases of enteric fever, except in a small minority of light forms. I have never been able to satisfy myself that it is practicable to produce and maintain intestinal antisepsis, however free the use of this class of agents, but have observed that they render the dejecta less offensive. I must admit also that intestinal antiseptics are powerless to inhibit the potency of the bacilli and hence to diminish the quantity of typhotoxin supplied to the circulation. In short we cannot hope to distroy the typhoid bacilli harbored by the walls of the ileum; and they, or most of them, have long since gained the circulation and adjacent organs—*e. g.*, the mesenteric glands, gall-bladder, etc.—where they develop their toxins. On the other hand, it is highly probable that intestinal disturbance in typhoid fever is in a measure at least dependent upon disorder of function which is the indirect effect of the typhoid infection. Some of the toxins occupying the intestinal canal result from the virulency of usually harmless organisms, whose habitat is the intestine. Presumably these toxic substances are absorbed from the tract and add to the gravity of the situation. A rational indication for treatment under these circumstances is to either neutralize in or eliminate from the intestinal canal these toxic substances. Perhaps the most efficient agent, and one that is free from all objections, is water. The free use of water tends to cleanse the gastrointestinal tract, besides increasing elimination of the typhotoxins and other retained substances through the kidneys—the principal channel through which nature aims to effect their excretion.

It is a manner of common observation that moderate constipation in typhoid fever is favorable and is attended with less meteorism than is met with in cases showing even moderate diarrhea. Owing to this fact I hesitate to recommend, nor have I been in the habit of employing, laxatives to unload the bowel for their eliminative effects, except, as indicated before in speaking of the use of calomel, in the early stage. Numerous advocates of the purgative treatment are to be found. Their claim that it rids the intestines of the typhoid bacilli and their toxins is absurd, in view of the fact that most of the bacilli, as intimated before, soon pass beyond the reach of purgatives. Osler contends that they are not indicated, "as it is not likely that the typhoid bacilli multiply and develop their poison to any extent in the intestinal contents themselves." I have, however, observed that saline laxatives given into divided doses until the evidences of their action are obtained are powerful to cut short the intermittent form of fever, sometimes seen late in protracted cases. That secondary bacterial invasion from the intestinal tract sometimes occurs, for which the debilitated state of the body furnishes the golden opportunity, is I think indubitable; and on this theory I have been led to use, as stated, saline laxatives with gratifying results. I regard it as undoubted that the diarrhea in typhoid fever is sometimes ascribable to the irritating properties of food residue from improper and overabundant feeding. Under these circumstances a mild laxative is followed by amelioration of the intestinal symptoms. I trust that my statements concerning the use of laxatives will not be construed as corroborative of

the claims of the Woodbridge treatment—a method that should be mentioned only to be condemned.

Intestinal antiseptics have a limited sphere of usefulness, exerting as they do a favorable effect upon some of the intestinal features, particularly tympanites; they also exercise a mitigating influence upon the diarrhea when present. The latter symptom, however, does not furnish an indication for their use unless the number of stools exceed three or four daily. The bowel antiseptic that I have employed for many years is salol. While this drug has a marked symptomatic influence, it is questionable whether complete antisepsis of the intestinal canal is accomplished by its use, and the same may be said of the remainder of the aromatic group—naphthol, benzo-naphthol, and naphthalin. The dose of salol in cases of average severity is three grains every three hours. When the indications are urgent, as much as two grains every hour may be employed for a short period, or until the urine is perceptibly tinged. It is best to use the drug in powdered form, as I have seen compressed tablets pass through the gut unchanged. In cases in which marked distention of the bowel is present as a symptom of the typhoid state, turpentine is to be preferred; it is an efficient antiseptic and also exercises a stimulating effect upon the circulation and the secretions. White turpentine is the preferable preparation, and may be administered in doses of three to five grains every three or four hours.

For the constipation which is sometimes present throughout the entire course of the disease, I have found an enema of soap suds given every second day to be followed by the best and speediest results. In a few instances I have practiced intestinal irrigation, with a view to diminishing absorption of toxins from the rectum and colon. This method is not to be thought of in cases in which the principal lesions are in the small intestines with moderate tympanites. On the other hand, in a considerable proportion of the cases the ulcerative process is largely confined to the colon; there is marked tympanites due to overdistention of the colon, and an active diarrhea, sometimes of a dysenteric character, or involuntary discharge of the feces may occur. In these cases intestinal irrigation, judiciously and cautiously carried out, tends to sweep from the bowel both decomposable material and a variety of resultant toxic products. Doubtless the accompanying catarrhal inflammation is decidedly benefited by this method of treatment. On the mode of administration will depend largely the success of this method. In the first place the antiseptic solution used must be warmed; it must be gently reduced at a low pressure, so as not to distend the inflamed and ulcerated colon. Soft-rubber rectal tube, "fenestrated at the sides, is to be gentle passed up to, or a line within, but not through the sigmoid flexure" (W. W. Johnston). The end of the rectal tube attached to the fountain or Davidson's syringe is to be detached after introducing about one quart of the solution, when the latter will escape without voluntary effort on the part of the patient. For this purpose I prefer salicylic acid or mercuric chloride; the strength of the former solution should not exceed one-half of one per cent, nor that of the latter 1 in 6000. In bad cases these irrigations should be practiced every fourth hour, whilst ordinarily thrice daily suffices.—*Therapeutic Gazette.*

THE PHYSIOLOGY OF THE SUPRARENAL CAPSULES.

At the February meeting of the New York County Medical Society, Professor Moore, of the Medical Faculty of Yale University, discussed the physiological properties of the suprarenal capsules. According to the report in the *Medical News*, he said: Our knowledge of the physiology of the suprarenal comes from three sources. First, from clinical medicine and the pathologic anatomy of these glands with the symptoms due to changes in them. This was the method that first brought the suprarenals into notice. Dr. Addison, in 1851, showed that their degeneration was associated with nervous and muscular asthenia and very greatly lowered blood-pressure. The second source was by the removal of these suprarenal glands from animals. Brown Séquard, in 1855, showed that the removal of one of these glands from a guinea pig was often fatal and the removal of both was always fatal. Later observers however, have denied this. Schaefer suggests that in these cases of survival, accessory glands remained which are not rarely found at dissections, and they make up for the organs that were removed. The third source of our knowledge of the physiological properties of the suprarenal is the one that is now of special interest. It is due to injections of the gland and the observation of the results it brings about. The ingestion of suprarenal substance by the mouth causes no marked symptoms. Subcutaneously administered the results are neither very striking nor uniform. Intravenously the suprarenal extracts produce marvelous effects. A fraction of a milligram causes a rise of blood-pressure to double or treble what it was before. This is all the more striking as blood-pressure is usually very stable and is affected by very few drugs. The increase of blood-pressure arouses the vagus, and this acts as a safety-valve in the prevention of over-stimulation of the heart. As a consequence, when large doses are administered, the ventricle stops beating, just as if the vagus were directly stimulated, although the auricles continue beating. If atropin is used to paralyze the vagus before the administration of suprarenal extract, the heart stimulation is noted. It might be thought that suprarenal substance causes a rise in blood-pressure by its action upon the vasomotor system and constriction of the small blood-vessels. It is, however, a stimulant to all muscle fibers. All the nerves leading to a part may be cut, yet constriction will take place when suprarenal extract is administered. If a freshly excised vessel of a diameter of ten to twelve millimeters be acted upon by some fluid containing suprarenal substance, the diameter at once goes down to one or two millimeters. The vessel practically becomes obliterated. This action has been seen very well in the inflamed conjunctiva

Extract of suprarenal is not affected by acids. The active principle retains all its energy even in a solution of ten per cent. of mineral acid Alkalies destroy it at once. At one time the active principle was thought to be a reduction derivative of pyridin acting like nicotin or coniin, which are reduction derivatives of pyridin. These substances resemble supra-

renal extract so much that it is surprising they have not been used more therapeutically. If suprarenal substance be heated with dilute acetic acid and then with zinc acetate the material obtained is most active. One-millionth of a gram to the kilogram weight of an animal will produce an easily perceived effect. Curiously enough, a much smaller dose produces an exactly opposite effect, that is to say, it lowers blood-pressure. This happens with a good many drugs, however, and might have been more or less expected.

The subject of the significance of the glands during life is still a matter of unsettled theory. Animals are usually killed by the shock of the removal of both glands. It is an extremely delicate operation, almost inevitably involving important abdominal nerve-plexuses and so readily leading to a fatal termination from surgical shock. Of late, attempts have been made by infection of the glands with various bacilli to produce gradual degeneration. One operator has had reported success in this way, and the procedure was followed by the development of the symptoms of Addison's disease. As to the mode in which the suprarenal affects the system, there are two principal theories. Schaefer thinks that there is some substance secreted by the gland which keeps up muscular tonicity, not only the muscular tonicity of the blood-vessel walls, but also that of the whole muscular system. The French school advances the theory that in the course of body metabolism certain substances are produced which lower muscular tone and that the secretion of the suprarenals neutralizes these substances. They urge the fact that the blood of animals from which the suprarenal glands have been removed is toxic for other animals. This argument, however, loses some of its weight when we recall that the injection of blood from any animal whose nutrition is very much lowered may seriously affect a healthy animal.—*Dietetic and Hygienic Gazette.*

COMPARATIVE DRUG VALUES AS OBSERVED IN THE TREATMENT OF 752 CASES OF WHOOPING COUGH.

Dr. Charles G. Kerley read this paper. As the cases had developed, they had been separated into groups of twenty, and were allowed to cough without treatment until the height of the paroxysmal stage had been reached, which usually required from ten to fourteen days Careful records had been kept of most cases both night and day. The ages of the patients treated varied between six weeks and twenty-six years. Three patients only had reached adult life. Five-sixths of the patients had been under four years of age, and one-half under two years of age. The duration of the attack had ranged from three to twenty weeks, the usual duration having been between six and eight weeks. He had found that the very young and the very delicate often did not whoop during a severe attack of whooping cough. The drug treatment consisted of insufflation, internal administrations and inhalations. Resorcin and boric acid, combined with bicarbonate of soda, were used by means of insufflations in six institution cases, but had been discontinued after three days because the treatment had been impracticable and useless. Vapo-cresoline had been tried with absolutely no result. He had allowed it to be used in a number of cases in private practice, because it quited the nervous parents, and did the child no harm. Alum, fluid extract of horse-chestnut leaves, dilute nitric acid, cocaine, bromoform, bromides, belladonna and antipyrin had all been tried. The first three had been used, and been found valueless Alum had appeared to be of some service, but had been badly borne by the stomach. Bromoform had proved very unreliable. Cocaine in doses of one-tenth of a grain every four hours for a child of two years had been employed in about twenty-five cases. It had controlled the severity of the paroxysms somewhat, but not sufficiently to warrant its continuance. He had found great benefit from quinine if a large amount could be given. It was difficult to give from twelve to twenty grains of this drug daily, as required. When quinine could be given in capsules, the number and severity of the paroxysms would be remarkably controlled—sometimes the number diminished one-third to one-half. He had used belladonna in sixty institution cases, administering it up the physiological effect; this had required from five to seven days. He had not observed from this any influence in a single case. True, the cases upon which it had been used were very severe, but they had yielded to other means. The children had been from six to seven years of age. Equal parts of bromide of sodium, ammonium, and potassium had been tried in sixty institution cases, using from twelve to sixteen grains daily for a child of one year. The results from this treatment were better than those previously mentioned. Antipyrin had been used in sixty institution cases, and he had found that it had controlled the paroxysms better than any other

drug he had employed, and caused only a trifling depression if administered with ordinary care. The combination of the bromide with antipyrin had been used in sixty cases, with better results than from using either one of these drugs independently. For a child of eight months, half a grain of antipyrin, and two grains of sodium bromide should be given every two hours for six doses, and then administration should be discontinued for a period of twelve hours. For a child between two and a half and four years of age, two grains of antipyrin and three or four grains of bromide should be given every two hours for twelve hours, and then discontinued for twelve hours before being resumed. The steam spray and fresh air were also useful adjuncts to the drug treatment of whooping cough. A child suffering from whooping cough should be frequently changed from one room to another, and the best possible ventilation secured. The author's conclusions were: (1) Every case of whooping cough may be relieved, either by modifying the severity, or diminishing the number of the paroxysms; (2) the duration of disease is probably not shortened by treatment; (3) remedies sedative in character, with fresh air, give the best results; (4) if the remedy is to be of service, its beneficial results may be noticed within twenty-four to forty-eight hours; (5) the best results are obtained when antipyrin and the bromides are commenced at the height of the paroxysmal stage and then pushed vigorously; (6) being sedative in character, the good effects may be lost in a prolonged case; and (7) children may have whooping cough and never whoop.—*Pediatrics.*

PHOSPHATURIA.

The clinical importance of phosphaturia varies according to the chemical variety which the phosphorus presents in the urine. The temporary variety where the phosphatic salts are amorphous is not of present importance, nor is the local disorder which results in the production of the triple form of deposit; but the third variety, in which the urine contains a deposit amounting, it may be, to a third or more of its whole bulk of stellar crystals of phosphate of lime, is full of interest, not only because it is little understood, but also because it is rare and not infrequently fatal. In cases of this type the phosphates are present permanently in excess, but periodically the daily average of the amorphous salts is increased by a more or less copious shower of stellar crystals. The patient complains of thirst, polyuria and languor. In cases where there is an increase of the urea as well as of the phosphorus, emaciation may become a feature. The urine is of low specific gravity and contains neither albumin nor, until the later stages, sugar; often not then. This form of phosphaturia is usually met with either in young adults of neurotic heredity or in men at middle life who have lived freely, curtailed themselves of the requisite amount of sleep and relaxation, and pursued brain-work under conditions where exercise was neglected and open air treated as a luxury. The disease may run a course symptomatically resembling diabetes melitus, but without sugar in the urine; or it may alternate with true diabetes, there being sometimes an excess of phosphates and no sugar, and at others sugar, but no remarkable excess of phosphates. The initial polyuria may excite suspicion in the patient's mind and lead him to see his medical adviser; but, if the case be one in which no sugar is found on application of the usual tests, it is apt to be looked upon as trifling and as wholly explained by a passing condition of nerve or digestive disturbance. Especially is this likely to happen if the urine chances to be examined at a time when the phosphates are only present in the amorphous form. As times goes on, the patient's thirst increases, he is conscious of progressive failure of his general vigor, and not infrequently he is annoyed and puzzled by an unreasonable irritability of temper, which is new to him. Neuralgia is a source of much misery in some cases, and may attack any nerve, but is specially prone to invade the branches of the trigeminal or facial; in others, the prevailing discomfort is a liability to recurring attacks of unaccountable drowsiness which no effort of will-power can shake off. When emaciation ensues there is always risk of the onset of phthisis. Guthrie Rankin (Lancet, Mar. 24, 1900).—*Monthly Cyclopaedia.*

MISCELLANEOUS.

Torsorial Antisepsis in Boston.

The board of health of Boston has issued an order enforcing cleanliness in barber shops in that city, its provisions being that "the place of business of all barber shops, together with all the furniture, shall be kept at all times in a cleanly condition Mugs, shaving-brushes, and razors shall be sterilized by immersion in boiling water after each separate use thereof. A separate clean towel shall be used for each person. Alum or other material used to stop the flow of blood shall be used only in powdered form and applied on a towel. The use of powder puffs is prohibited. Every barber shop shall be provided with running hot and cold water. No person shall be allowed to use any barber shop as a dormitory. Every barber shall thoroughly cleanse his hands after serving each customer.--*N. Y. Med. Record.*

Cancer Infection in Relation to Operative Treatment of Cancer.

J. Bland-Sutton, in the *Clinical Journal* of January 24, 1900, says the cause of cancer has been earnestly sought for, but as yet it has not been found. The disease is still insidious in origin, of steady progress, rebellious to treatment, and distressing in its termination. When extensive operations are necessary for the removal of cancer the result is often questionable, and one of the most important complications is cancer infection. These tumors have no proper limits, and it would be impossible for an exper microscopist to tell exactly where the morbid growth leaves off and normal tissue begins. This constitutes one of the worst difficulties in dealing with them surgically. Again, a common method of extension of these growths is by way of the lymphatics, and the extent to which this infection has taken place cannot be accurately defined in a given case. The old rule that carcinoma spreads along the lymphatics and sarcoma by the veins is approximately correct. This refers to those cases in which the abdominal wall has developed cysts after ovariotomy; these he thinks are due to the infection of these structures during the removal of the diseased ovary. It is this accidental infection of the cut surfaces that leads to that rapid dissemination of a cancerous growth which sometimes follows extirpation, in some cases removal seeming only to accelerate the disease. In cancer of the breast recurrence is due to their removal or cancer infection. It is difficult, particularly in thin persons, to remove the entire gland. Occasionally the surgeon removes a cancerous breast, the pectoral muscles, the axillary glands and lymphatics, together with their surrounding fat, and this is followed by wide-spread tumors infiltrating the skin that was raised in the operation. This result is due to the distribution of cancer cells in the course of the operation. He especi-

ally recommends in operations upon the breast for cancer that the lymphatics be followed into the axilla and the tissues removed *en masse*, avoiding the opening of the lymphatic channels and the dissemination of the cancer cells. This method is far superior to the dissection of isolated glands.—*Medicine.*

Ozœna.

Cozzotino, in the Ann. des Mal. de l'Or, reported in the Jour. Laryng. Rhin. and Otol., discusses very fully the bacteriology and histology of this disease. His ob-ervations establish the fact that the first pathological change takes place in the periosteum, and medullary space of the bone. The atrophic process in the erectile turbinate tissue is a later stage, and is accompanied by the obliteration of the efferent ducts of the glands. The epithelium is the last structure undergoing change.

The writer claims to have established that atrophic rhinitis is not the result of catarrh : but that the atrophy of the membrane follows upon the anæmia resulting from the involvement of the arterioles in the preliminary periosteal changes.

The bacillus muscosus was present in all his cases, but this he considers due to the stagnant glairy mucus, coating the fossæ, affording a favorable nidus for the bacillus, which was in no way responsible for the disease itself. Any inflammatory cells and micro-organisms found in the superficial lagers of the mucosa are due merely to the final atrophic state of the epithelium, and the constant presence of irritating decomposing mucus.

The ozœna patient is predestined from infancy to a nutritive deficiency which determines the gradual changes in this bone and periosteum.—WISHART.

The Treatment of Obesity.

Dissatisfied with the results obtained by following the régime of Oertel, von Hosslin (*Münch. Med. Woch.*, 1899, No. 38) has followed out a combination method for the treatment of obesity, his procedure resting on the following principles:

1. Nourishing the patient with a purely albumen-fat diet according to the principle of Ebstein's gout-obesity diet.
2. Increasing metabolism by means of hydrotherapy, in the form of cold applications and sweat baths.
3. Administration of thyroid tablets.
4. Increase of oxidation by means of active bodily exercise.

Carried out in its entirety this method leads to the very best results, though the author reports that the omission of any part of this line of treatment is likely to lead to an increase of the patient's weight. He cites instances where the treatment has been successful, and others where omission of a part of the detail has caused increase of the patient's weight. —*Medical Age.*

The Treatment of Disorders of the Digestion, Associated with Chronic Rhino-Pharyngitis and Tonsillitis.

Aviragnet, in La Presse Medicale, reported by Jour. Laryng. and Otol., considers that the gastro intestinal dyspepsia, from which children, the victims of chronic rhino-pharyngitis usually suffer, is due to the constant swallowing of the muco-pus secreted by the diseased parts. He advocates the treatment of such cases, by nasal irrigations, and the injection of resorcin in olive oil—5%. This is injected into each nostril, with the child laid on its back.—WISHART.

Treatment of Hematuria with Gelatin.

Dr. Schwabe (*Therapeutische Monatshefte*, 1900, No. 6) says that by Carno in 1896, and after him by Dastre and Florensce, in France, the hemostatic action of gelatin was noticed. Later Lancereaux used gelatin in the treatment of aneurisms. The provings of the gelatin therapy have up to date shown favorable results, and indications for the same are becoming more extended; as a result tampons of gelatin are used even in local bleeding, and have proven to be very reliable. Schwabe reports a case of hemorrhagic nephritis accompanied by severe hemorrhage from the kidneys in which the gelatin was very efficacious. He used hypodermically in the usual combination 25 cubic centimeters, which he injected under each clavicle. He also allowed the patient to take half a liter of ten-per-cent. solution of gelatin daily for eight days. On the eighth day all red blood-corpuscles had disappeared from the urine.—*Med. Age.*

Prognosis of Laryngeal Cancer.

Chiari, Ann. des Mal. de l'or, reported by the Jour. Laryng. Rhinol. et Otol, has had under his charge in the past eleven years eighty-three cases of laryngeal cancer, in twenty-five of which operation was advised and performed. The results are tabulated as follows:—Eight died shortly, nine died of recurrence from six to eighty-six months after operation, and eight remain cured, six having passed the three years' limit. Thyrotomy is urged in all suitable cases.—WISHART.

Palatable Castor-Oil.

℞	Saccharin	gr. xii.
	Olei gaultheriæ (or menthæ pip)	♏. xv.
	Alcohol	ʒiv.
	Olei ricini	Oi.

This addition of saccharin, aromatic oil, and alcohol has been used in making cod liver oil palatable, and is very successful.—*Med. Times and Hosp. Gaz.*

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EDITORIAL.

THE TUBERCULIN TEST IN THE DIAGNOSIS OF LATENT PULMONARY TUBERCULOSIS.

It is generally agreed that the prognosis in a given case of pulmonary tuberculosis largely depends upon the undertaking of proper treatment at the very onset of the disease, during the *pretubercular* stage, or the *latent* period, before the appearance of the signs and symptoms by which the condition is ordinarily recognized. The specific bacillus is only found in the sputa after disintegration of lung tissue has begun, and while its diagnostic value is undoubted, to wait for its appearance before making a diagnosis means to wait until the tubercular foci have begun to soften and ulcerate, until secondary infection has occurred with often widespread involvement of tissue, and thus allow the time to pass when treatment might have been undertaken with fair hopes of success. Moreover in acute miliary tuberculosis and in cases where the infection remains localized in the glands, joints or bones, the examination of the sputa is of no value in arriving at a conclusion. Clinicians have therefore been

studying methods by which the disease may be recognized before the curable stage has passed. Among the more satisfactory means that have been employed may be mentioned the use of the X ray, and tuberculin, both of which have been found of undoubted value.

The ill results which followed the employment of tuberculin in the *treatment* of pulmonary tuberculosis, where it frequently produced a reaction with softening of the tubercular foci and dissemination of the bacilli throughout the system, prejudiced the profession so much against it, that its use was almost entirely discarded. In veterinary practice, however, it continued to be employed for diagnostic purposes and its practical value has been generally recognized. At the present time there appears to be a decided reaction in favor of its use in the detection of cases of latent tuberculosis in the human subject. Among others, we have such competent authorities as E. L. Trudeau, J. T. Whittaker, E. O. Otis, Von Jaksch, and J. M. Anders advocating its merits in properly selected cases. To show the value of the test, Anders (*N. Y. Med. Jour.*) has collected 1470 suspicious cases in which a positive reaction was given in nearly 72 per cent. In a certain proportion of cases of undoubted tuberculosis of long standing, the reaction fails to occur, perhaps because the patient has become naturally tolerant, or in some cases because the test has not been properly carried out. It has also been urged against the tuberculin test that a reaction occurs in about ten per cent. of apparently healthy individuals, but here the response to the test is less marked, and it is well to remember how frequently a tubercular infection exists entirely unsuspected.

The method of carrying out the test is important. Trudeau recommends that the patient's temperature be taken thrice daily for two or three days before making the test. Then inject one milligramme of tuberculin at night as an initial dose. If there is no alteration in the temperature curve during the following two days, on the evening of the third, inject three milligrammes. If no reaction occurs, wait two days and then inject five milligrammes. Trudeau rarely goes above this amount though a larger dose may be necessary to cause a response in affections of the glands or bones. Anders recommends slightly larger initial doses—from two to five milligrammes, thinking that the results are more certain. According to Trudeau children are especially susceptible to the action of tuberculin, and the agent should not be used in cases where the temperature rises above 100° F., for here the diagnosis should be made by other means. Either Koch's original tuberculin or its modified form may be employed.

Used in small doses, in incipient or latent cases, this agent appears to be free from danger and it will undoubtedly find a much more ex-

tended use than it has at present. The profession cannot refuse to ignore the value of an apparently harmless method by which a diagnosis can be arrived at in so large a proportion of cases, especially when an early recognition of the disease is a *sine qua non* to successful treatment.

ANTITYPHOID INOCULATION.

In the February number of the CANADA LANCET we referred editorially to the employment of sterilized cultures of the typhoid bacillus as a vaccine in the prophylaxis of typhoid fever. This treatment had been used with encouraging results in India and was largely resorted to among the troops bound for service in South Africa. The subsequent deplorable outbreak of typhoid amongst the British troops in various parts of the field of operation offered excellent opportunities for a study of the degree of protection afforded by inoculation, and to compare the incidence and the severity of the disease among the inoculated and the uninoculated respectively. Only very meagre reports are to hand at the present time, but such as have appeared, encourage the hopes of those who considered the method of value in the prophylaxis of the disease. Dr. Conan Doyle (*Brit. Med. Jour.*) writing of the outbreak at Bloemfontein, believes that if vaccination had been made compulsory, the army would have escaped from most of its troubles. While by no means an absolute preventive, it certainly modified the course of the disease very materially. Professor Wright, of Netley, furnishes equally interesting information confirmatory of the same fact. In the beleaguered garrison at Ladysmith, typhoid fever occurred seven times as frequently among the uninoculated, and he thinks that fuller reports may be even more favorable. Better results might also be expected if the vaccination had been more thoroughly carried out and revaccination resorted to. The publication of the complete statistics will be awaited with great interest, not only by the medical profession but by the military authorities and the general public.

THE PLAYTER EPISODE.

The recent fining of Dr. E. Playter to the tune altogether of about $500.00, on the charge of having established a nuisance by opening a sanitarium in Deer Park for the treatment of consumptives, has aroused a good deal of interest in the profession. As an appeal has been entered against the ruling of the magistrate the case is still *sub judice*, and therefore not open to discussion. We are bound to say, and are at liberty to say,

that granting, for argument's sake, that the conviction was just, the fine was excessive, unnecessary, and has the appearance of vindictiveness on the part of some one. We express no opinion as to Dr. Playter's skill and success as manager of the institution, nor as to the wisdom of establishing at all an institution altogether too small to meet the needs of the public—but it is our opinion that the outcome of the case will be to stampede the public into an unreasonable fear of tuberculosis. The pendulum is already swinging much too far, and it will be in the near future the duty of the profession to hold the public in check, or the inmate of a consumption sanitarium will be regarded with the same dread and aversion as now attaches to the unfortunate sufferer from small pox or insanity. We shall await the re-trial of the case with much interest.

EDITORIAL NOTES.

University of Toronto Medical Faculty.

The Senate of Toronto University have recommended the following appointments:

J. J. Mackenzie, B.A., M.B., to be professor of pathology and bacteriology, in place of Dr. John Caven, who has resigned.

Dr. J. A. Amyot, to be associate professor in pathology and bacteriology, or professor of clinical pathology, at his option.

Dr. F. N. G. Starr, associate professor of clinical surgery and also demonstrator of anatomy.

W. Mackeown, B.A., M.D., demonstrator of clinical surgery.

C. L. Starr, demonstrator of clinical surgery, instead of assistant demonstrator of anatomy.

A. R. Gordon, M.B, demonstrator in clinical medicine, instead of assistant demonstrator of anatomy.

Dr R. D. Rudolf, lecturer in medicine and clinical medicine, instead of assistant demonstrator in anatomy.

Dr. K. C. McIlwraith, demonstrator of obstetrics, instead of assistant demonstrator of anatomy.

Dr. W. P. Caven, associate professor of clinical medicine.

H T. Machell, M.D., associate professor of obstetrics and pediatrics; his work to be confined to pediatrics.

G. Chambers, M.A., M.B., demonstrator in clinical medicine.

Dr. G. R. McDonagh, professor of laryngology and rhinology.

W. H. Ellis, M.A., M.B., professor of toxicology.

Bertram Spencer, M.D., professor of medical jurisprudence.

Dr. W. H. Beemer, to be extra-mural professor of mental diseases.

The Senate also decided that in future there would be an examination at the end of the third year of the medical course.

American Pathological Society.

A meeting of pathologists and bacteriologists recently held in Washington, appointed a committee consisting of Drs. W. T. Councilman, S. Flexner, H. C. Ernst, L. Hektoen, W. H. Park, Theobald Smith and W. T. Howard, Jr., to arrange details relating to the organization. We are pleased to see this section of the profession following the example set by other branches in the formation of a separate association.

Medical Incomes in the U. S.

Dr. J. M. Dodson, of Chicago, is authority for the statement that the average income from practice in the large cities of the United States is $2,000; in smaller towns, $1,500, and in country districts, $1,200 yearly. The largest income he knows of in America is $80,000, though two or three New York physicians are said to make over $100,000.

British Columbia Medical Association.

The above association met at Vancouver on August 9th and 10th.

Trinity Medical College.

The fall session at Trinity Medical College will begin on Sept. 18th this year, the introductory address being delivered by Rev. Armstrong Black, D.D., at 4 p.m. in the College Theatre.

PERSONAL.

Dr. Victor A. Hart, of Sault St. Marie, has returned from a six months' visit to Europe. While abroad, Dr. Hart took the triple qualification of Edinburgh.

Dr. J. L. Bradley (Trinity '95) has also taken the triple qualification at Edinburgh, and Dr. W. I. Taylor (Trin. '98) has passed the examination of the conjoint board of London.

The honorary degree of F.R.C.S. of England, has been conferred upon Mr. I. H. Cameron, of Toronto, and Dr. Roddick and Sir William Hingston, of Montreal. These gentlemen are to be congratulated on being the first Canadians to receive this honor.

Dr. P. MacNaughton (Trinity '88) has been appointed resident medical assistant in the Asylum for the Insane, Mimico.

Dr. J. A. Amyot has been appointed provincial bacteriologist in place of Dr. J. J. McKenzie, resigned.

Dr. Thos. Kerr, Dovercourt Road, Toronto, has sailed for Europe, where he will remain for some months.

Much sympathy is felt for Hon. Dr. Borden, Minister of Militia, in the death in action near Pretoria, of his only son, Lieutenant Borden, of the Royal Canadian Regiment. Lieutenant Borden was only 23 years of age, was an ardent soldier and a third year medical student in McGill College.

Dr. A. R. Robinson, of New York, has been spending a holiday in Muskoka.

Dr. A. A. Sheppard, formerly house surgeon at the Sick Children's and Toronto General Hospital, is opening an office in Sault Ste. Marie.

Dr. A. D. Stewart (Tor. '99), of last year's resident medical staff, Toronto General Hospital, has left to assume the duties of surgeon on the R.M.S. Empress of Japan, from Vancouver to Hong Kong.

Dr. J. B. Gullen, Toronto, is spending the summer in Europe.

We are pleased to note that Dr. J. N. E. Brown (Tor. '92), has been appointed Secretary to the Yukon Administration. Dr. Brown, who was Secretary of the Ontario Medical Association for several years, went to Dawson City about two years ago as secretary to Commissioner Ogilvie.

Dr. W. Stephens (Trinity '99), who has gone as a medical missionary to Western China, in a letter from Kiating dated June 26th, makes no reference to any troubles in China.

Dr. M. B. Dean, lately House Surgeon of the Toronto General Hospital, has begun practice at Fort William.

We are pleased to learn that Dr. Charles D. Parpitt (Trinity '94), who has been very ill with pneumonia, is recovering.

Dr. Jas. Third (Trin. '91), has resigned his position as Superintendent of the Kingston General Hospital, It is stated that Dr. Herald will be his successor.

Col. G. Sterling Ryerson, late Red Cross Commissioner with Lord Roberts' Headquarters, has returned home in good health. Col. Ryerson's work has received the highest commendation from both military and medical authorities in South Africa and from all the military correspondents. His services have been frequently mentioned in despatches from the seat of war. While it is a source of gratification to Canadians in general that one of their number should have been able to render such distinguished service, THE LANCET is particularly pleased as Colonel Ryerson is one of our associate Editors. We hope to have some contributions from him in our columns at an early date.

COMMUNICATIONS.

TREATMENT OF INEBRIATES.

Editor "LANCET," Toronto.

SIR:—As intimated in the May number of the LANCET, the bill regarding the treatment of inebriates prepared at the suggestion of the Ontario Government, from whatever cause, was not introduced at the last session of the Legislature. This bill was prepared with great care by a committee of the Prisoners' Aid Association in association with the Public Health Committee of the Ontario Medical Association. It was submitted to and approved by the medical members of the Ontario Legislature, and it was also strongly endorsed by an influential deputation which waited upon the Ontario Government. As this bill is based upon what is known as the probation system, and as the probation law had its origin in Massachusetts, I visited that state recently with a view more particularly of studying the practical working of the probation system. Possibly my observations and conclusions may be of interest to the readers of the LANCET.

The probation system was adopted in the State of Massachusetts several years ago in dealing with youthful offenders under 16 years of age, and the results were so satisfactory that about five years ago the system was extended to cases of adult first offenders and to the more hopeful cases of inebriety. The results it is claimed have been most gratifying. In every criminal court throughout the State an officer, called a probation officer, is appointed by the court, who takes the supervision of cases placed on probation under suspended sentences. The probation officer makes friendly visits to the probationers, not in the capacity of an informer, but in the capacity of a friendly visitor, and he does what he can to place the probationer on a higher plane of life and living. At the end of the probationary period the probationer appears in court and if the report of the officer is favorable the person on probation may discharged or the probation may be continued. If the report is unfavorable the probation may be continued or the person may be committed either to prison or to a house of correction.

While in Boston I made it my business to look into the practical working of the probation system, I accompanied the probation officers while making their early interviews with prisoners in the police cells awaiting trial. I made the rounds with one of these officers outside to ascertain the truth or falsity of the statements made and I followed the cases as they were afterwards dealt with in court. I also attended the weekly probation court held for the purpose of dealing with cases whose term of probation had expired. Besides this I interviewed the chief probation officer and several of his assistants—two of whom are ladies—regarding the working of the probation system. I also interviewed others who are in a position to judge regarding the results attained by the system of probation. As a result of this investigation and these enquiries my conclusions are as follows: That from 80 to 85 per cent. of those

placed on probation for petty offences, and about 45 per cent. to 50 per cent. of those placed on probation for drunkenness are either reformed or at least are not known to be again arrested. It is claimed that 80 per cent. of all those placed on probation are reformed, but unfortunately the statistics are not compiled in such a manner as to demonstrate this. I found, however, that there is a consensus of opinion—among those who are in a position to know—that the probation system in Massachusetts is giving great satisfaction. The Secretary of the Massachusetts Prison Association said to me that although the statistics are not as complete as they might be, "We *know* that probation is doing a good work." I found, moreover, that there is now a bill before the State Assembly which, when adopted, will extend very materially the scope of the probation law.

I visited the State institution for the treatment of dipsomaniacs which is situated at Foxborough, about thirty miles from Boston. It is on a farm containing 100 acres, most of which is under cultivation. The hospital is on the cottage plan and there were 198 patients under treatment the day of my visit. Dr. Woodbury is the superintendent and he has one medical assistant. The institution is thoroughly equipped, including gymnasium, baths, lecture hall, etc., etc., at a total cost of about $200,000. The income is about $48,000 a year—$13,000 of which is from municipalities, $11,000 from industries, $2,500 from pay patients, and the balance made up by the State. Patients are admitted on the certificate of two licensed physicians, and the municipality where the patient is committed is liable for the payment of the expense of maintenance, the same as in the case of lunatics In cases, however, where the patient has no "legal settlement," the expense is borne by the State. Besides farming, the principal industry is broom-making. Patients are committed for a period of two years, but they may receive a conditional discharge (on parole or probation) any time after six month's detention. The average cost per patient is $5.30 per week. This includes all expenses as follows: provisions $1.32, clothing etc., $1.77, wages $2.21. The results of treatment (report for 1899) are as follows: doing well 37.12 per cent., improved 13.77 per cent., unimproved 32.93 per cent., dead 1.19 per cent., could not be found 14.97 per cent. In reply to my question the superintendent stated that the chief cause of relapse after discharge is lack of employment; a second cause is lack of efficient supervision.

While in Boston I also visited the Washingtonian Home for Inebriates, which is under the charge of Dr. Ellsworth, and I had an interview with Dr. Temple, surgeon to the Massachusetts' Home for Intemperate Women. I submitted the provisions of the proposed Ontario bill for the treatment of inebriates to these specialists as well as to Dr. Woodbury of Foxborough, and also to members of the Massachusetts Prison Association. And I was gratified to find the consensus of opinion was in its favor. Dr. Woodbury was very emphatic in his commendation of the idea of combining medical treatment with the probation system and he assured me he was convinced that very great good would be accomplished by making provision for home treatment in addition to general hospital treatment in connection with the probation system and as provided for in the Ontario bill.

Yours truly, A. M. ROSEBURGH.

BOOK REVIEWS.

A MANUAL OF CLINICAL DIAGNOSIS BY MEANS OF MICROSCOPIC AND CHEMICAL METHODS.

By Charles E. Simon, M. D., Late Assistant Resident Physician John Hopkins Hospital, Baltimore, Fellow of the American Academy of Medicine. Third Edition. Lea Bros. & Co., Philadelphia, 1900.

The chemical considerations in this work add largely to its interest and value, giving the student a much clearer insight into the substances with which he is dealing. A brief description, chemical and microscopic, of the various fluids of the body in the normal state, precedes in each case that of the pathological, a comparison most essential in such a work.

The blood is examined and described from every side. Each element is discussed with great accuracy, not only from its microscopic appearance, but with its chemical affinities and staining peculiarities, the preparation of stains and their application are clear. The section devoted to the secretions of the mouth contains many points of interest.

That on "Examination of Stomach Contents" is full of instructive points. Nearly all known tests for the different elements are given and commented upon, not from what others say, but from the author's own experiences. The tests and reactions are clearly described and, what is most important, directions for the preparation of reagents.

The clinical significance and mode of formation of pathological elements are tersely discussed The study of faeces, normal and pathological, occupies some fifty pages, all points being dealt with, from the number of stools daily to the bacteriology of the contents. Intestinal parasites, gall stones and their analysis. chemical tests for blood coloring matter, albumen, peptones, bile pigment, &c., are all considered, as well as the special study of the alvine discharges in different diseases. Sputum is discussed from the microscopic and chemical aspects.

The chemical examination of urine is unusually deep for a text book of this character. The origin, mode of formation, reactions and clinical significance of the bodies found in it are described at great length. The simpler methods of examination are given, and possible errors in the reactions emphasized, while for those wishing to enter more deeply into the matter, more complex and exact methods are described. The organized elements are well illustrated.

There are short sections on semen, vaginal discharges, exudates and transudates, cyst contents and milk. In these the chemical as well as the microscopical characters are considered.

The author is evidently a strong advocate of Lumbar puncture. He cites a long list of investigations with results, and anticipates a bright future for the operation, for both diagnostic and therapeutic purposes.

The work is of great value to student and practitioner, and while it is admirably suited to guide one in the ordinary simple examinations of the body fluids, it may still be used as a reference for the deeper and more complex investigations that some cases demand.

H. C. P.

DUANE'S MEDICAL DICTIONARY.

New (3rd) Edition. A Dictionary of Medicines and the Allied Sciences. Comprising the Pronunciation, Derivation and full Explanation of Medical, Pharmaceutical, Dental and Veterinary Terms; together with much collateral descriptive matter, numerous tables, etc. By Alexander Duane, M. D., Assistant Surgeon to the New York Ophthalmic and Aural Institute; Reviser of Medical Terms for Webster's International Dictionary. In one large square octave volume of 656 pages, with 8 full-page colored plates. Cloth, $3.00, net; full flexible leather. $4.00, net. Lea Brothers & Co., Philadelphia and New York.

The Third Edition of Duane's Medical Dictionary thoroughly revised, and with the addition of a large amount of new material, is to hand.

As the author says "practical utility rather than historical tradition has controlled the selection of matter," so that obsolete words are omitted, thus leaving more space for material useful in a "working" dictionary. The pronunciatian of words is indicated in a simple way, and the definitions are concise and accurate.

We have used the book and find that it comes fully up to the standard claimed for it in the author's introduction to the work.

To those who wish a good reliable working dictionary, concise in form and of moderate price, this book can be confidently recommended

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A Practical Treatise on Sexual Disorders of the Male and Female.—By Robert W. Taylor, A.M., M.D., Clinical Professor of Venereal Diseases at the College of Physicians and Surgeons (Columbia University), New York; Surgeon to Bellevue Hospital and Consulting Surgeon to the City Charity Hospital, New York. Second edition with 91 illustrations and 13 plates in colour and monochrome. Lea Bros. & Co., New York and Philadelphia, 1900.

It is indeed a genuine pleasure to have the opportunity of reading a new edition from so careful and painstaking an authority as Dr. Taylor. In the second edition of this work he devotes chapters to the anatomy and physiology of the sexual organs; then he describes the nature and composition of the seminal fluid as a preliminary introduction to the discussion of impotence in the male. He deals exhaustively with the various conditions of psychical, symptomatic, atonic, and organic

impotence in all its phases, giving cases and treatment. The chapters on inflammation of the bulbous and prostatic urethra and also those dealing with the prostate and seminal vesicles are specially to be commended and invite our most serious consideration. New chapters on vaginismus and masturbation in women are added. The treatment of these various disorders follow along the lines deduced from a consideration of pathological conditions found, rather than from any preconceived notions Some chapters are necessarily short in a work of this kind as chap XXVII on sexual perversion, but, as the author explains, these have been exploited *ad nauseam.* One cannot read this work without greatly benefitting by the many suggestions which invite one into new paths of thought.

C. A. T.

NETTLESHIP ON THE EYE (New Edition).

Diseases of the Eye.— By Edward Nettleship, F.R.C S., Ophthalmic Surgeon at St. Thomas' Hospital, London; Surgeon to the Royal London Ophthalmic Hospital, etc. New (6th) American from the sixth English edition, throughly revised by William Campbell Posey, M.D. With a supplement on the detection of color blindness by William Thomson, M.D., Professor of Ophthalmology in the Jefferson Medical College, Philadelphia. Just ready. In one 12mo. volume of 562 pages, with 192 illustrations. Selections from Snellen's test-types and formulae, and 5 colored plates. Cloth, $2.25, net. Lea Bros. & Co., Philadelphia and New York.

This is one of the most useful and handy little volumes for the student and busy practitioner, being concise and to the point, and for a work of its size Mr. Nettleship must be congratulated for cramming so much into it.

The publishers have added to the English edition in several parts, particularly in the chapters on methods of examination, and in some of the the therapeutic measures which have been employed by ophthalmologists on this side of the ocean.

A large number of illustrations have been inserted, an appendix on the laws governing the vesical tests for admission into the public services of the United States, also the methods employed in examining the eyes of school children in certain American cities. We can highly recommend this work to the student and general practitioner.

C. T.

We are glad to welcome another edition of Sampson's Operative Surgery. Useful alike to the student of medicine and the busy practitioner in the brevity and clearness of its descriptions of the various operations, it is yet sufficiently full for most purposes. The present edition shows a number of changes, the majority of which are improvements on past editions. It is sure to hold the high place in the profession that its merits entitle it to.—F. Le. M. G.

PUBLISHERS' DEPARTMENT.

The Journal of Surgical Technology

is the title of a new periodical, to be published monthly, beginning July 1, 1900. It will be devoted to the consideration of the technic of surgical procedures, at a subscription price of $1.00 a year. Valuable premiums are offered with the first subscriptions. Address the Technique Publishing Co., 404 East 14th St., New York City, N. Y., for sample copy.

An American Remedy in Ireland

The Antikamnia Chemical Company have forwarded to us from their London House. No. 46, Holborn Viaduct, samples of their five-grain antikamnia tablets, and also of antikamnia and codeine tablets. The former are so well known that it seems hardly necessary to do more than refer to them as an unequalled analgesic. The antikamnia and codeine tablets contain four and three-fourths grains of antikamnia and a quarter of a grain of codeine. This is a valuable combination, the synergetic effects being all that could be desired.

—Extract from *Dublin Medical Journal*, March, 1900

"An appendix to the 'International Directory of Laryngologists and Otologists,' compiled by Mr. Richard Lake, is in course of preparation. In it will be found corrections of names and addresses already given, an additional list of names and addresses received since publication, and an obituary list.

". . . . Considerable additions have been obtained for the foreign list, which will materially add to its value and completeness. The decision of the editors of the *Journal of Laryngology, Rhinology and Otology*, under whose auspices the Directory is published, to allow no name to be inserted in the British list for which sanction has not been given in writing, at once explains some omissions and criticisms. The editors, whilst desirous of making the Directory as complete as possible, consider it best to adhere to this course. It is therefore hoped that all engaged in the practice of Laryngoloy, Rhinology and Otology will assist as far as possible in making this useful work complete," by sending in their names and addresses to the editor, "International Directory of Laryngologists and Otologists," 119 Shaftesbury Avenue, W.C.—*Journal of Laryngology, Rhinology and Otology*, April, 1900.

Dr. W. E. Hamill, who conducts the Canadian Medical Exchange, has removed to his former office at 88 Yonge St., upstairs.

Intestinal Rest in Typhoid.

It is an axiomatic principle in both Surgery and Medicine that a congested or inflamed part needs rest.

The Surgeon recognizes this when he immobilizes the fractured bone and retains the fragments in apposition; the physician likewise appreciates the great importance of this principle in cases of gastric ulcer when he feeds his patient by the rectum in order to avoid irritating the inflamed part, either directly, or by exciting gastric motility. Although Typhoid Fever is essentially a systemic disease, its characteristic local lesion is the intestinal ulcer, which should, as far as possible, be kept at rest. Milk, which has heretofore been regarded as the only proper exclusive food, is as a recent writer says, "not a liquid diet, but a deceptive solid"—capable of filling the small intestines with dense indigestible curds which scratch and irritate the ulcerated bowel, and in addition, ferment and cause gaseous distention, tympanites, etc. Liquid Peptonoids, on the other hand, is open to none of these objections. Its administration affords rest to the ulcerated intestinal tract, because:

1st. It is pre-digested and therefore promptly absorbed from the stomach, leaving no residue for the bowel to dispose of.

2nd. No curds are formed as from milk.

3rd. It is absolutely asceptic and cannot cause fermentation, tympanites or increased peristalsis, resulting in diarrhea.

4th. It has the requisite nutritive power to maintain life for weeks and even months, especially in febrile conditions.

Another advantage of Liquid Peptonoids is its palatability, which renders it grateful to the patient, especially when given ice cold.

From one to two tablespoonfuls every two, three or four hours, should be given as necessary. When an efficient intestinal antiseptic is required, as it very frequently is in this disease, Liquid Peptonoids with Creosote provides both food and remedy at one and the same time. The unpleasant taste of the Creosote is almost entirely abolished in this combination. Each tablespoonful contains two minims of pure beech-wood creosote and one minim of guaiacol, its active principle.

Uterine Derangements.

I have used Aletris Cordial in my practice for over a year, and to say that I am pleased with it does not nearly express the degree of my satisfaction. Aletris Cordial fills a long-felt want with me. Symptoms attending uterine derangements have always been perplexing to physicians, but with this remedy the trouble vanishes as dew before the rising sun.—L. M. McLendon, M.D., Georgiana, Ala.

Warner's New Therapeutic Reference Book.

Regarding this hand-book of therapeutics, we wish to say it is one of the very few guides of its kind offered students and busy practitioners. As its preface states, it is not intended to teach graduates anything about

SYP. HYPOPHOS. CO., FELLOWS

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It differs in its effects from all Analogous Preparations: and it possesses the important properties of being pleasant to the taste, easily borne by the stomach, and harmless under prolonged use.

It has gained a Wide Reputation, particularly in the treatment of Pulmonary Tuberculosis, Chronic Bronchitis, and other affections of the respiratory organs. It has also been employed with much success in various nervous and debilitating diseases.

Its Curative Power is largely attributable to its stimulant, tonic and nutritive properties, by means of which the energy of the system is recruited.

Its Action is Prompt: It stimulates the appetite and the digestion ; it promotes assimilation, and it enters directly into the circulation with the food products.

The prescribed dose produces a feeling of buoyancy and removes depression and melancholy ; *hence the preparation is of great value in the treatment of nervous and mental affections.* From the fact, also, that it exerts a double tonic influence, and induces a healthy flow of secretions, its use is indicated in a wide range of diseases.

When prescribing the Syrup please write, "Syr. Hypophos. FELLOWS" As a further precaution it is advisable to order in original bottles.

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therapeutics, but is to be regarded rather as a handy aid to a poor memory. Many exceedingly valuable tables are represented, including the metric table, thermometric equivalents, etc., valuable tests for various matters, including urinary tests for albumen, sugar, etc., etc., comparative values of certain foods, a complete dose table of drugs, a list of diseases and their remedies, hints as to indications of pregnancy, recommendations as to Post-mortem examinations, etc., etc. The brief mention above gives but a faint idea of the many valuable departments of this new book.

The subjects are interesting and are written in such a manner as to give a comprehensive idea of what is in the author's mind. "Warner's New Therapeutic Reference Book" must not be confused with "Warner's Therapeutic Reference Book." The latter has been discarded, the new one taking its place. So many new features have been added and the other parts entirely re-written to a great extent, that it may be termed a new book.

It is bound in two styles, one leather at 50 cents, and the other a leatherette at 25 cents per copy, postage prepaid in both instances.

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